

Pioneer *sound.vision.soul*

Service Manual



ORDER NO.
CRT2806

MULTI-CD/DAB CONTROL HIGH POWER CD PLAYER WITH RDS TUNER

DEH-P6400R

XN/EW

COMPACT
disc
DIGITAL AUDIO

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-977	CRT2624	S9	CD Mech. Module:Circuit Description, Mech.Description, Disassembly

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For details, refer to "Important symbols for good services".

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[Important symbols for good services]

In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely. When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety



You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments



To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning



For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws



To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts



Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount. For replacement parts or tools, the prescribed ones should be used.

● CD Player Service Precautions

1. For pickup unit(CXX1480) handling, please refer to "Disassembly"(see page 47)
During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a jumper-solder).

2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please checking the grating after changing the service pickup unit(see page 41).

1. SAFETY INFORMATION

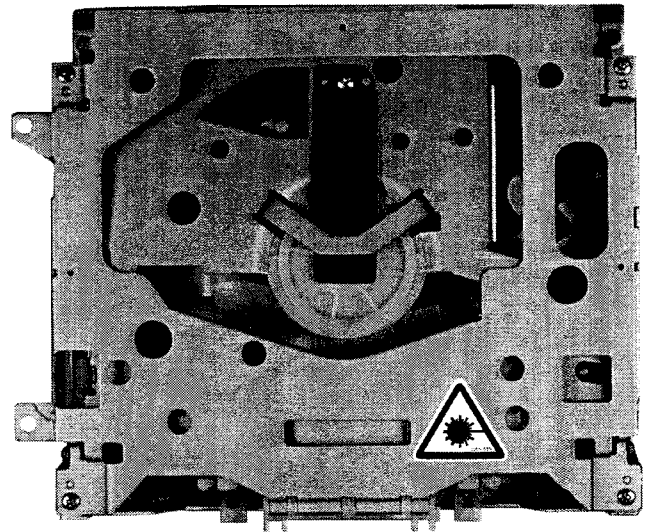
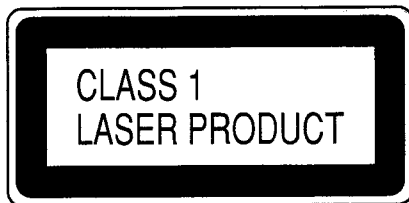
This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

1. Safety Precautions for those who Service this Unit.

- When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
 2. During repair or tests, do not view laser beam for 10 seconds or longer.
2. A "CLASS 1 LASER PRODUCT" label is affixed to the bottom of the player.
 3. The triangular label is attached to the mechanism unit frame.



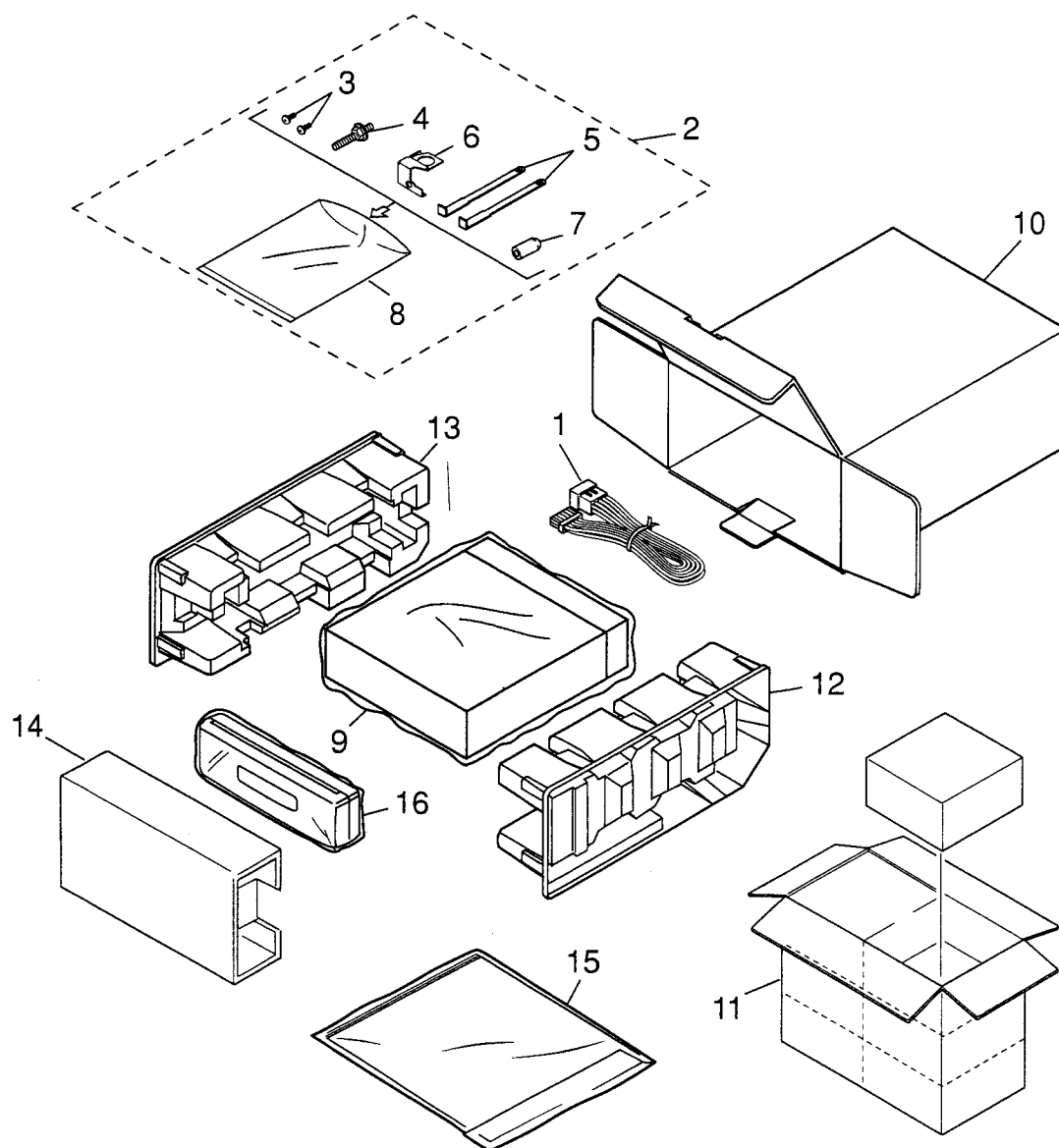
4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.

Wavelength = 800 nanometers

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ▽ mark on the product are used for disassembly.

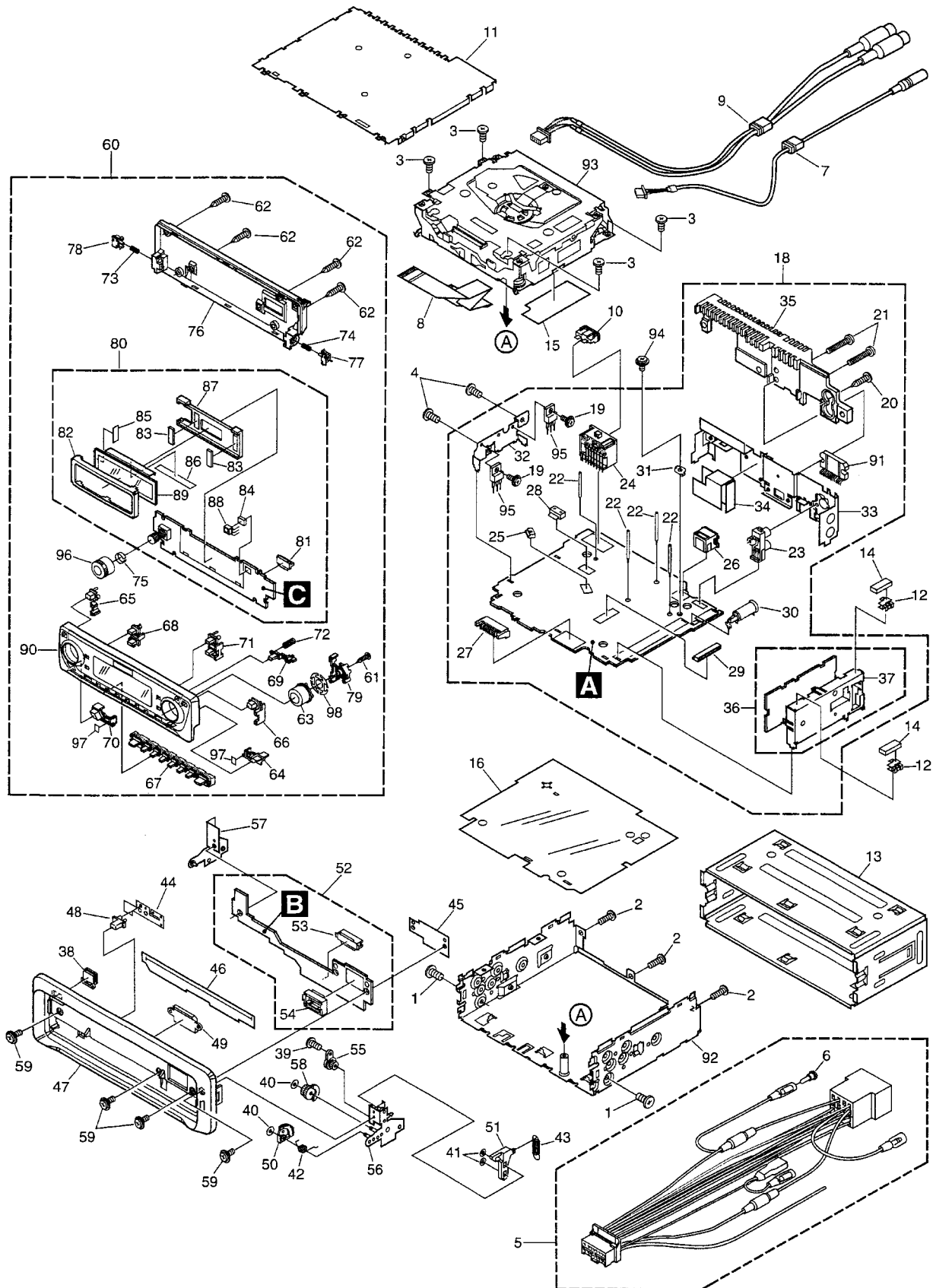
● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Cord Assy	CDE6435		15-2	Owner's Manual	CRD3514
	2	Accessory Assy	CEA3062		15-3	Owner's Manual	CRD3515
	3	Screw	BPZ20P060FZK		15-4	Installation Manual	CRD3529
	4	Screw	CBA1002	*	15-5	Caution Card	CRP1207
	5	Handle	CNC5395	*	15-6	Passport	CRY1013
	6	Earth Plate	CNC9450				
	7	Bush	CNV3930	*	15-7	Warranty Card	CRY1157
*	8	Polyethylene Bag	E36-615		15-8	Polyethylene Bag	CEG1116
	9	Polyethylene Bag	CEG-162		16	Case Assy	CXB3520
	10	Carton	CHG4628				
	11	Contain Box	CHL46283				
	12	Protector	CHP2251				
	13	Protector	CHP2252				
	14	Inner Box	CHW1754				
	15-1	Owner's Manual	CRD3513				

● Owner's Manual, Installation Manual

Part No.	Language
CRD3513	English, Spanish
CRD3514	German, French
CRB3515	Italian, Dutch
CRD3529	English, Spanish, German, French, Italian, Dutch

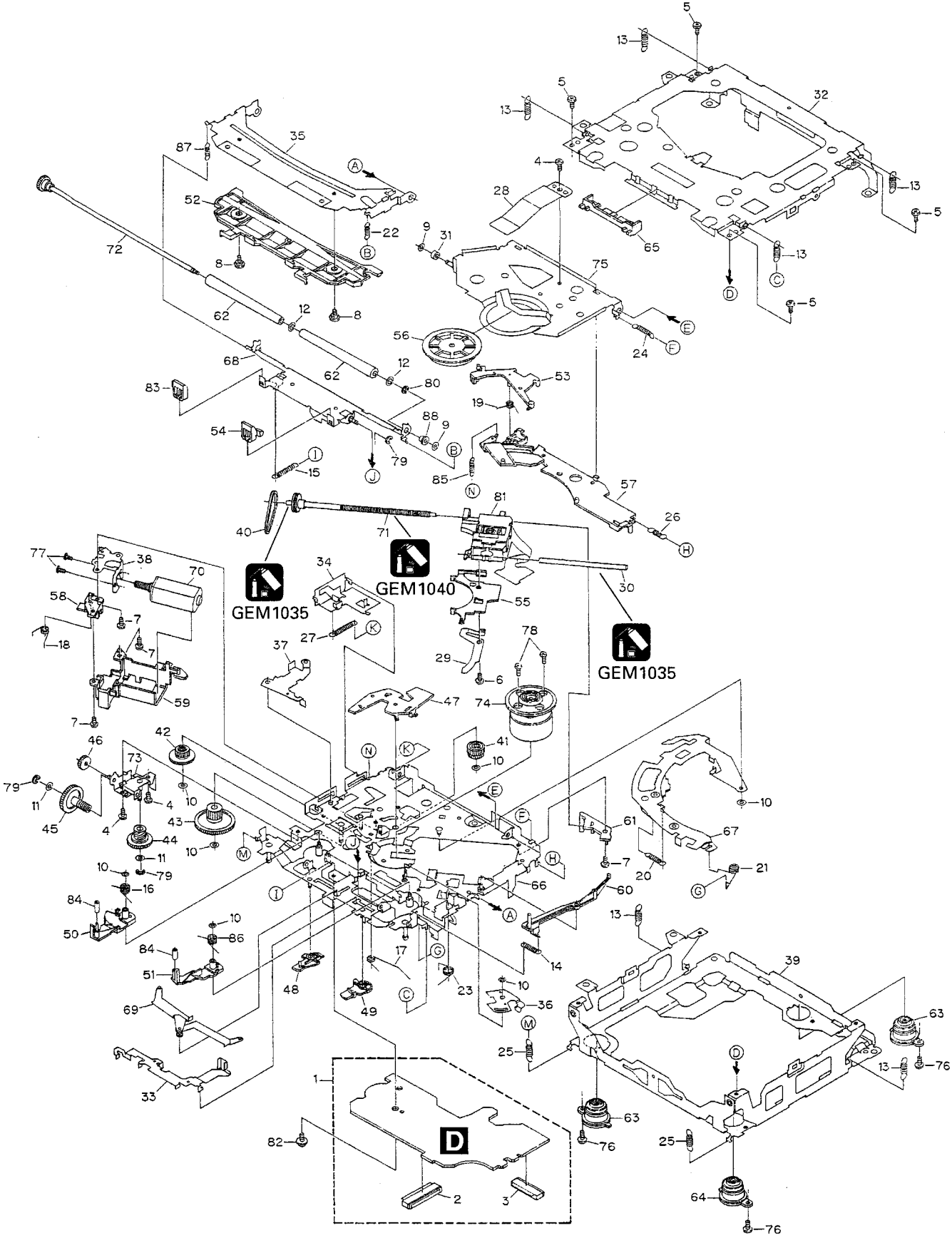
2.2 EXTERIOR



● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FZK		51	Arm	CNV6508
	2	Screw	BMZ30P100FMC		52	Panel Unit	CWM7986
	3	Screw	BSZ26P060FMC		53	Socket(CN1850)	CKS3550
	4	Screw	BSZ30P040FMC		54	Connector(CN1851)	CKS4462
	5	Cord Assy	CDE6435		55	Damper Unit	CXB5070
	6	Cap	CKX-003		56	Holder Unit	CXB6356
	7	Cord Assy	CDE6717		57	Holder Unit	CXB6357
	8	Cable	CDE6714		58	Clutch Unit	CXB6358
	9	Cord Assy	CDE6454		59	Screw	IMS20P045FZK
	10	Fuse(10A)	CEK1136		60	Detach Grille Assy	CXB7914
	11	Case	CNB2686		61	Screw	BPZ20P080FMC
	12	Holder	CNC5704		62	Screw	BPZ20P100FZK
	13	Holder	CNC8659		63	Button(SELECT)	CAC7220
	14	Cushion	CNM4870		64	Button(SFEQ)	CAC7221
	15	Insulator	CNM7214		65	Button(TA)	CAC7223
	16	Insulator	CNM7629		66	Button(AUDIO)	CAC7224
	17			67	Button(1-6)	CAC7225
	18	Tuner Amp Unit	CWM7984		68	Button(DISP)	CAC7226
	19	Screw	ASZ26P060FMC		69	Button(OPEN)	CAC7227
	20	Screw	BPZ26P120FMC		70	Button(EQ)	CAC7231
	21	Screw	BSZ26P160FMC		71	Button(FUNC)	CAC7489
	22	Clamper	CEF1007		72	Spring	CBH2630
	23	Pin Jack(CN351)	CKB1035		73	Spring	CBH2431
	24	Plug(CN901)	CKM1330		74	Spring	CBH2430
	25	Plug(CN451)	CKS1049		75	Spring	CBL1470
	26	Connector(CN101)	CKS3408		76	Cover	CNS6740
	27	Plug(CN801)	CKS3537		77	Holder	CNV6505
	28	Connector(CN352)	CKS3598		78	Holder	CNV6506
	29	Connector(CN653)	CKS3835		79	Holder	CNV6909
	30	Antenna Jack(CN401)	CKX1056		80	Keyboard Unit	CWM7990
	31	Holder	CNC5399		81	Connector(CN1901)	CKS4524
	32	Holder	CNC8615		82	Holder	CNC9642
	33	Holder	CNC9469		83	Cushion	CNM6633
	34	Insulator	CNM6949		84	Cushion	CNM7469
	35	Heat Sink	CNR1583		85	Spacer	CNM7697
	36	FM/AM Tuner Unit	CWE1562		86	Spacer	CNM7698
	37	Holder	CNC8815		87	Holder	CNV6910
	38	Button(EJECT)	CAC6839		88	IC(IC1903)	TSOP1840SB3V
	39	Screw(M2x2)	CBA1176		89	OEL Unit	MXS8017
	40	Washer	CBF1038		90	Sub Grille Assy	CXB8815
	41	Washer	CBF1039		91	IC(IC301)	PAL007A
	42	Spring	CBH2428		92	Chassis Unit	CXB8480
	43	Spring	CBH2429		93	CD Mechanism Module(S9ANA)	CXK5501
	44	Spring	CBL1512		94	Screw	ISS26P055FUC
	45	Holder	CNC9096		95	Transistor(Q921,999)	2SD2396
	46	Cover	CNM6854	*	96	Knob	CAA2697
	47	Panel	CNS6930		97	Spacer	CNM7807
	48	Pin	CNV6486		98	Cushion	CNM7808
	49	Lighting Conductor	CNV6487				
	50	Gear	CNV6507				

2.3 CD MECHANISM MODULE

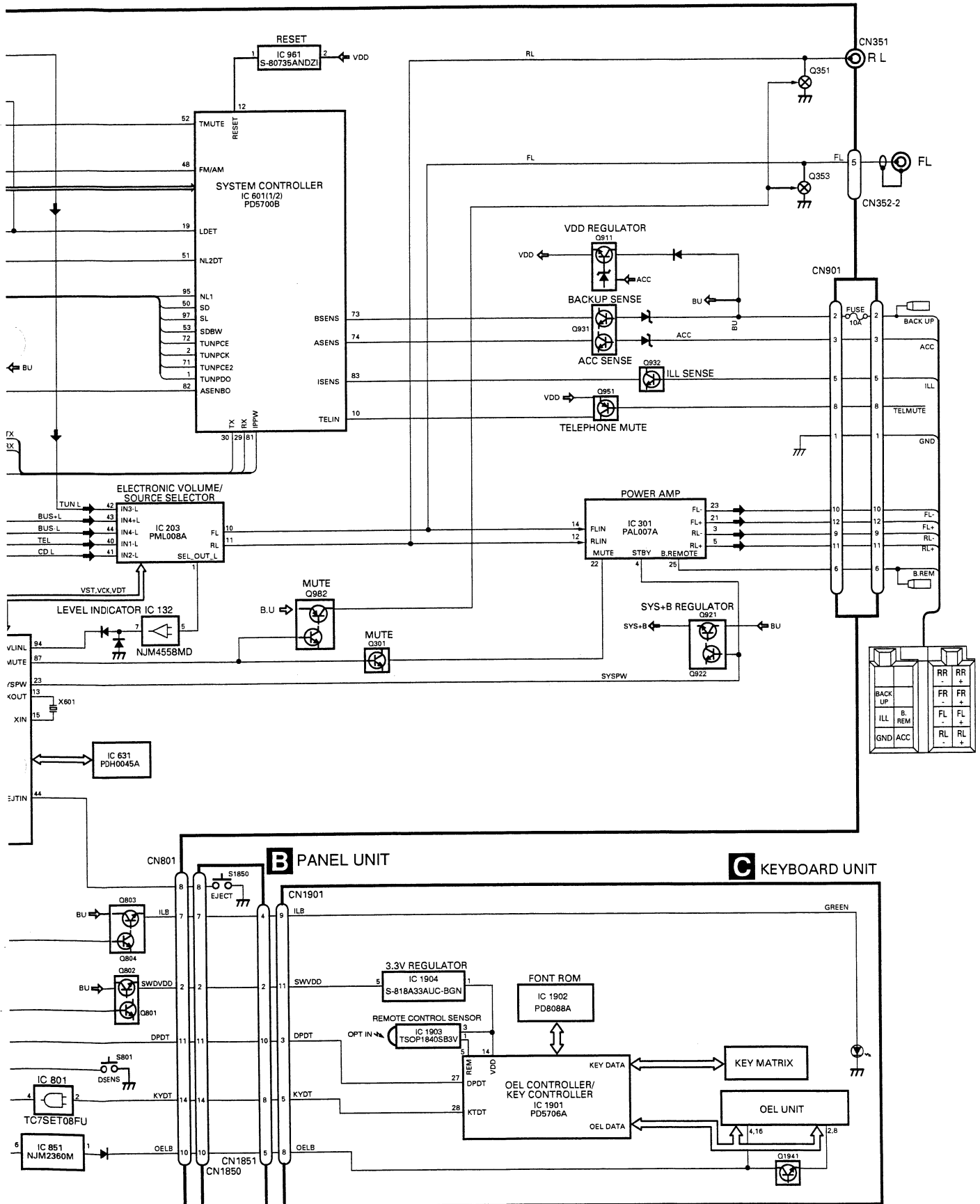


● CD MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Control Unit	CWX2481	46	Gear	CNV6320
2	Connector(CN701)	CKS1959	47	Arm	CNV6322
3	Connector(CN101)	CKS3486	48	Arm	CNV6323
4	Screw	BMZ20P025FMC	49	Arm	CNV6324
5	Screw	BSZ20P040FMC	50	Arm	CNV6888
6	Screw(M2x4)	CBA1362	51	Arm	CNV6889
7	Screw(M2x3)	CBA1527	52	Guide	CNV6327
8	Screw	CBA1545	53	Arm	CNV6924
9	Washer	CBF1037	54	Guide	CNV6921
10	Washer	CBF1038	55	Rack	CNV6923
11	Washer	CBF1039	56	Clamper	CNV6331
12	Washer	CBF1060	57	Arm	CNV6332
13	Spring	CBH2378	58	Guide	CNV6333
14	Spring	CBH2379	59	Cover	CNV6334
15	Spring	CBH2514	60	Arm	CNV6335
16	Spring	CBH2533	61	Guide	CNV6336
17	Spring	CBH2382	62	Roller	CNV6338
18	Spring	CBH2383	63	Damper	CNV6339
19	Spring	CBH2384	64	Damper	CNV6340
20	Spring	CBH2527	65	Guide	CNV6925
21	Spring	CBH2386	66	Chassis Unit	CXB7980
22	Spring	CBH2537	* 67	Arm Unit	CXB7983
23	Spring	CBH2390	68	Arm Unit	CXB7984
24	Spring	CBH2391	69	Arm Unit	CXB7985
25	Spring	CBH2523	70	Motor Unit(M2)	CXB5903
26	Spring	CBH2426	71	Screw Unit	CXB5904
27	Spring	CBH2444	72	Gear Unit	CXB8076
28	Spring	CBL1561	73	Bracket Unit	CXB7982
29	Spring	CBL1553	74	Motor Unit(M1)	CXB6007
30	Shaft	CLA3845	75	Arm Unit	CXB8504
31	Roller	CLA3910	76	Screw(M2x5)	EBA1028
32	Frame	CNC9654	77	Screw	JFZ20P020FMC
33	Lever	CNC9664	78	Screw	JGZ17P020FZK
34	Lever	CNC8949	79	Washer	YE15FUC
35	Arm	CNC9661	80	Washer	YE20FUC
36	Arm	CNC9016	81	Pickup Unit(Service)(P9)	CXX1480
37	Arm	CNC9017	82	Screw	IMS26P030FMC
38	Bracket	CNC9123	83	Guide	CNV6922
39	Frame	CNC9656	84	Roller	CNV6887
40	Belt	CNT1086	85	Spring	CBH2509
41	Gear	CNV6886	86	Spring	CBH2512
42	Gear	CNV6316	87	Spring	CBH2536
43	Gear	CNV6317	88	Collar	CNV6906
44	Gear	CNV6318			
45	Gear	CNV6319			

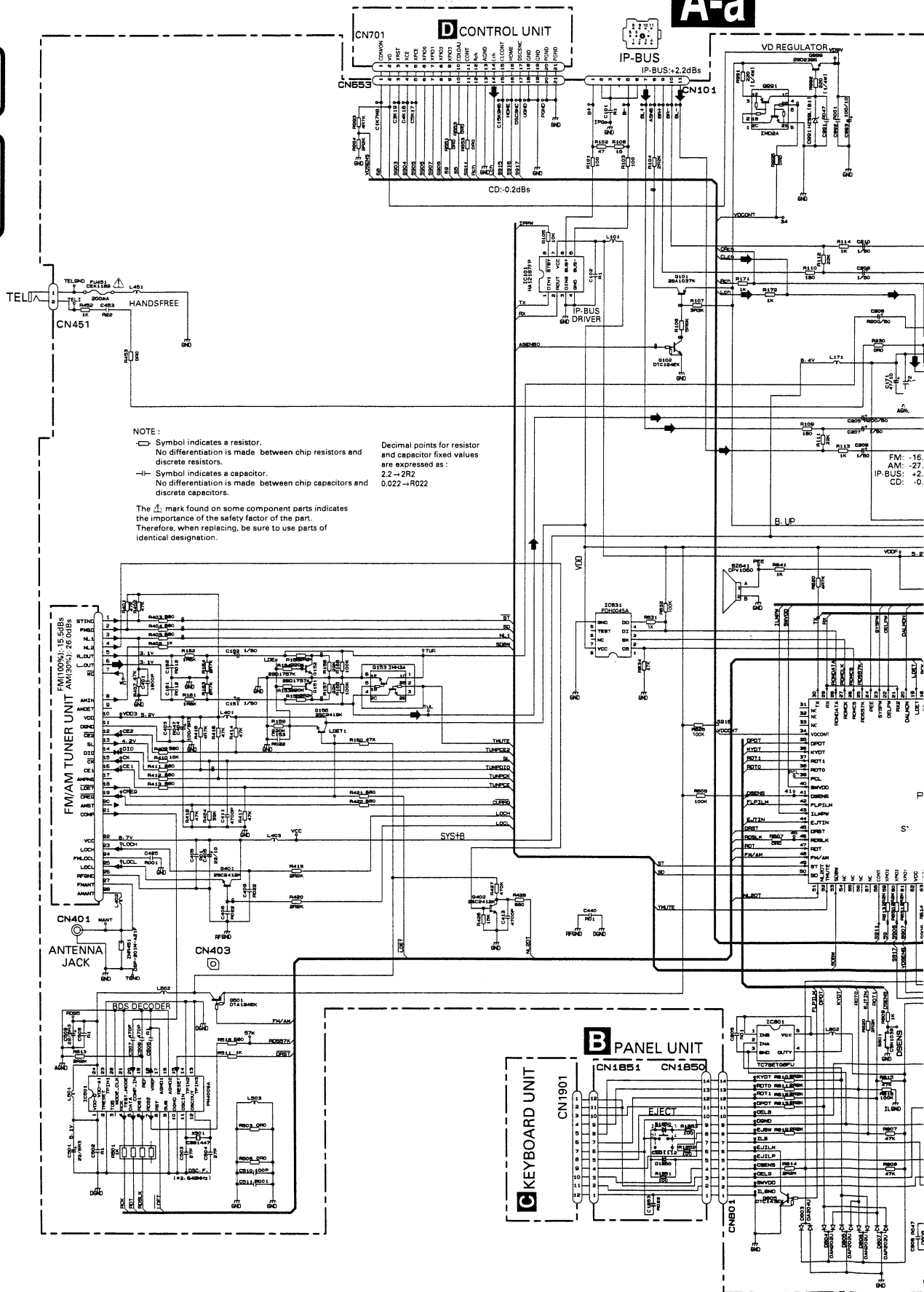
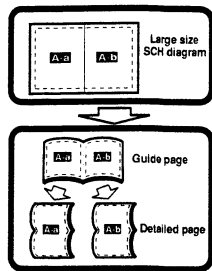
3.1 BLOCK DIAGRAM





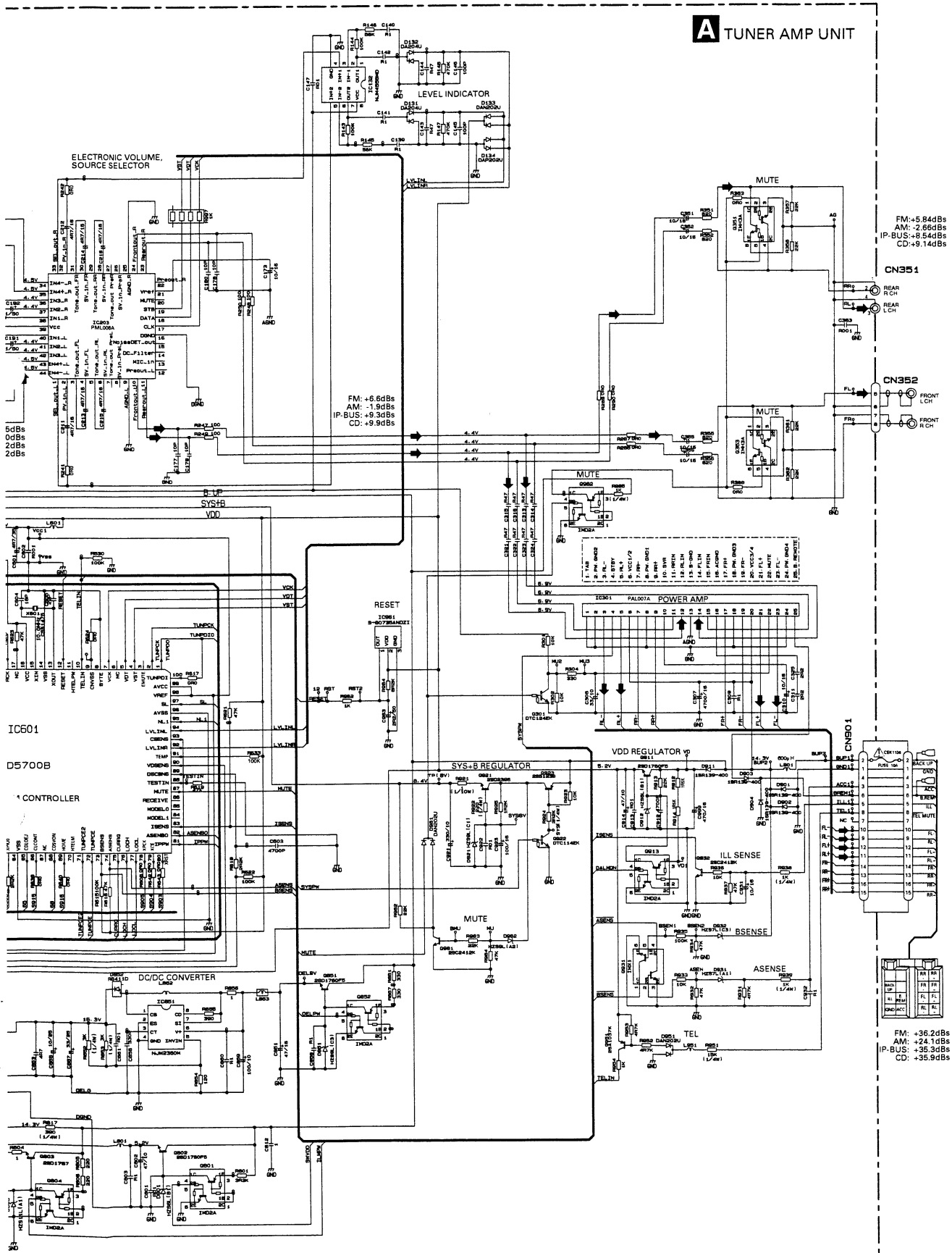
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

+2.2dBs

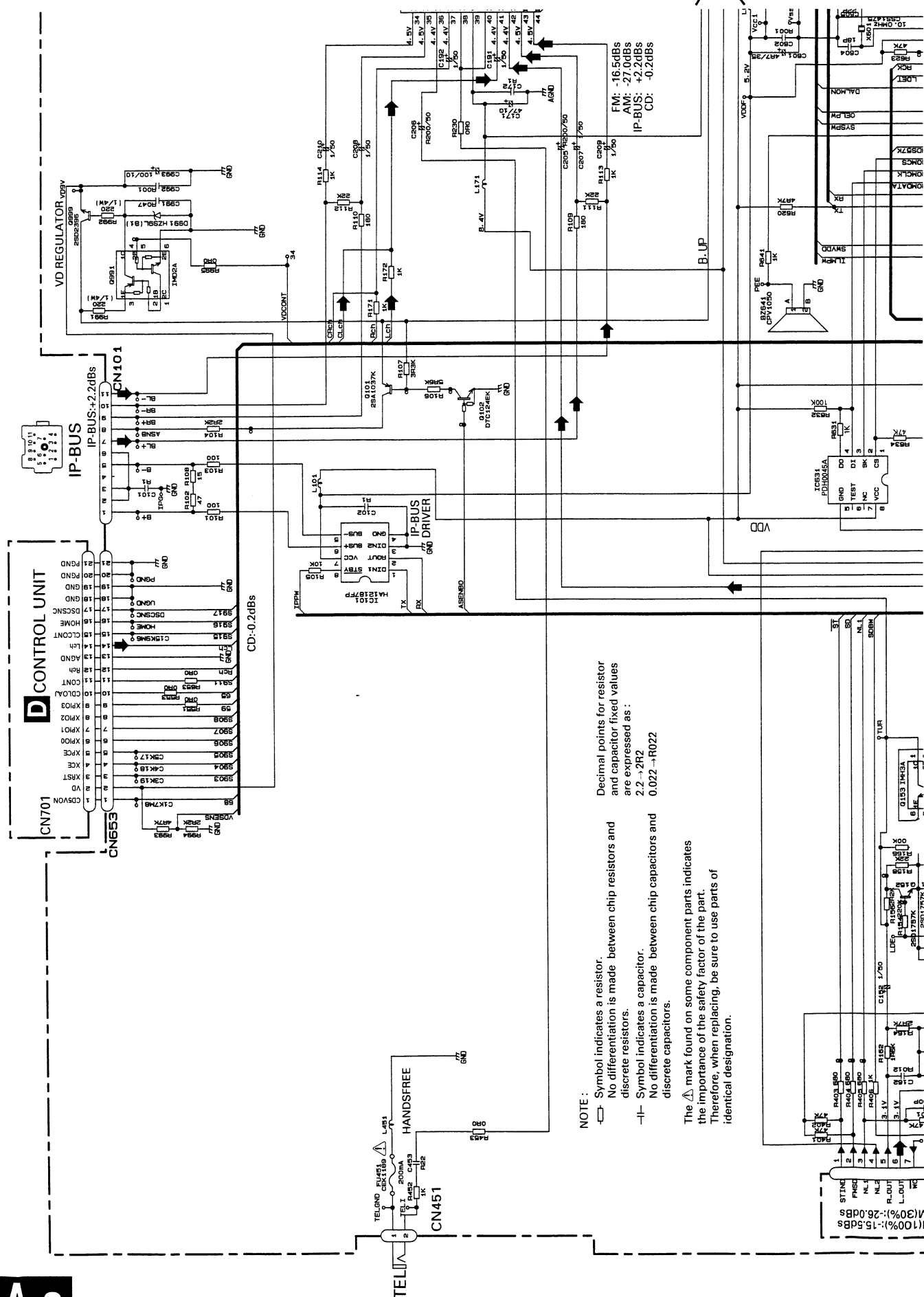


A-b

A TUNER AMP UNIT



A



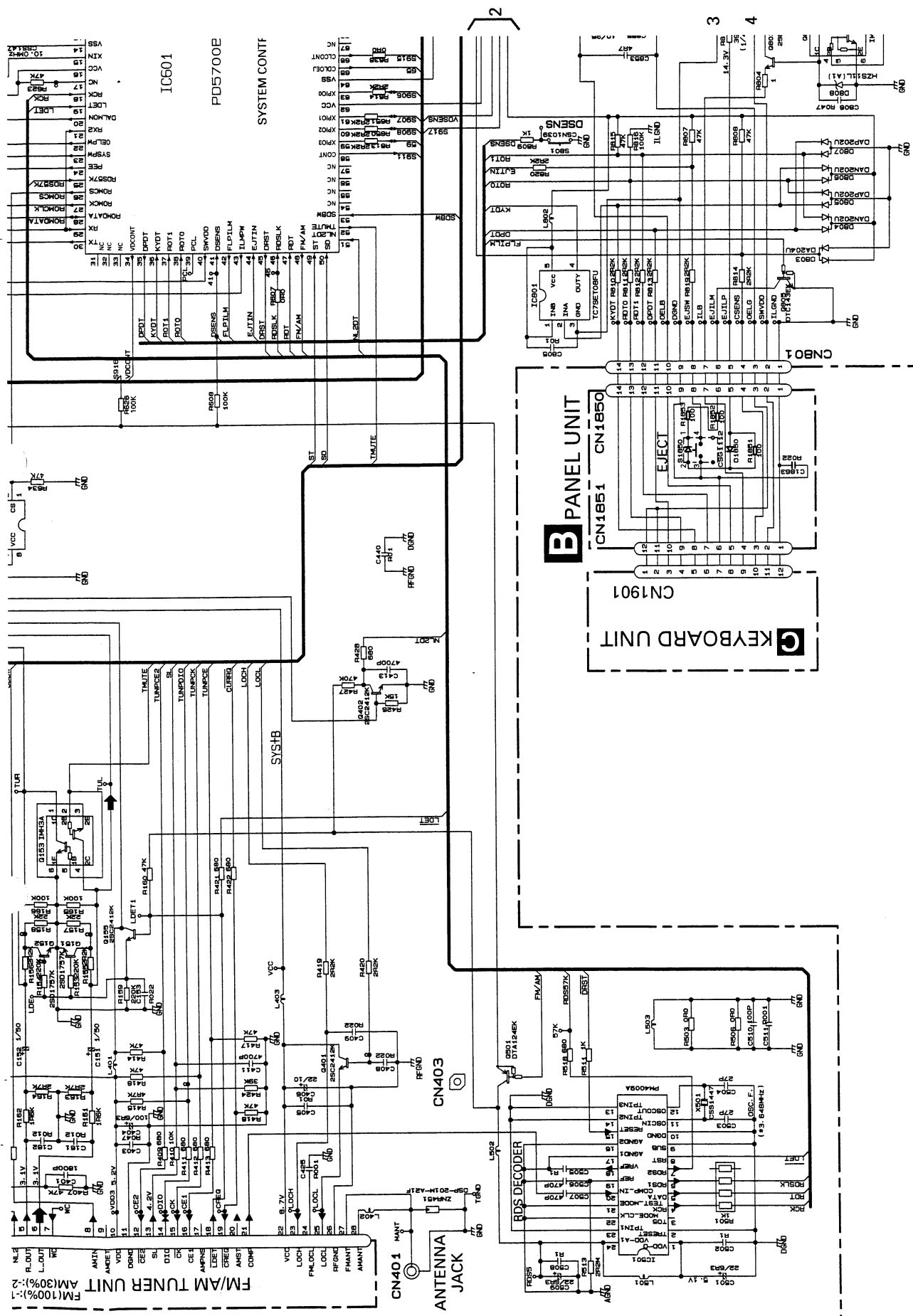
NOTE:

- Symbol indicates a resistor.
- No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
- No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:

- 2.2 → 2R2
- 0.022 → R022

The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

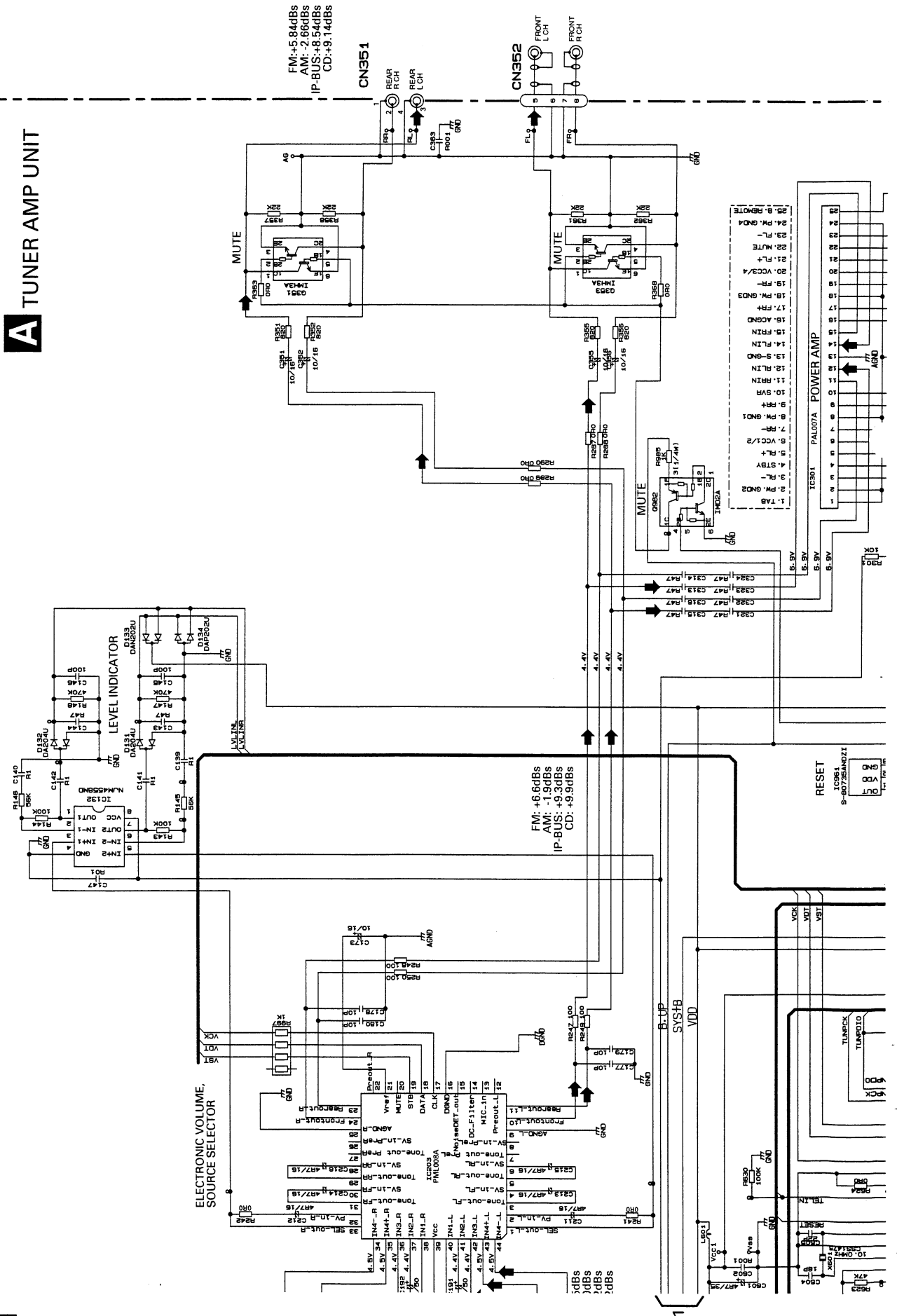


A-a A-b

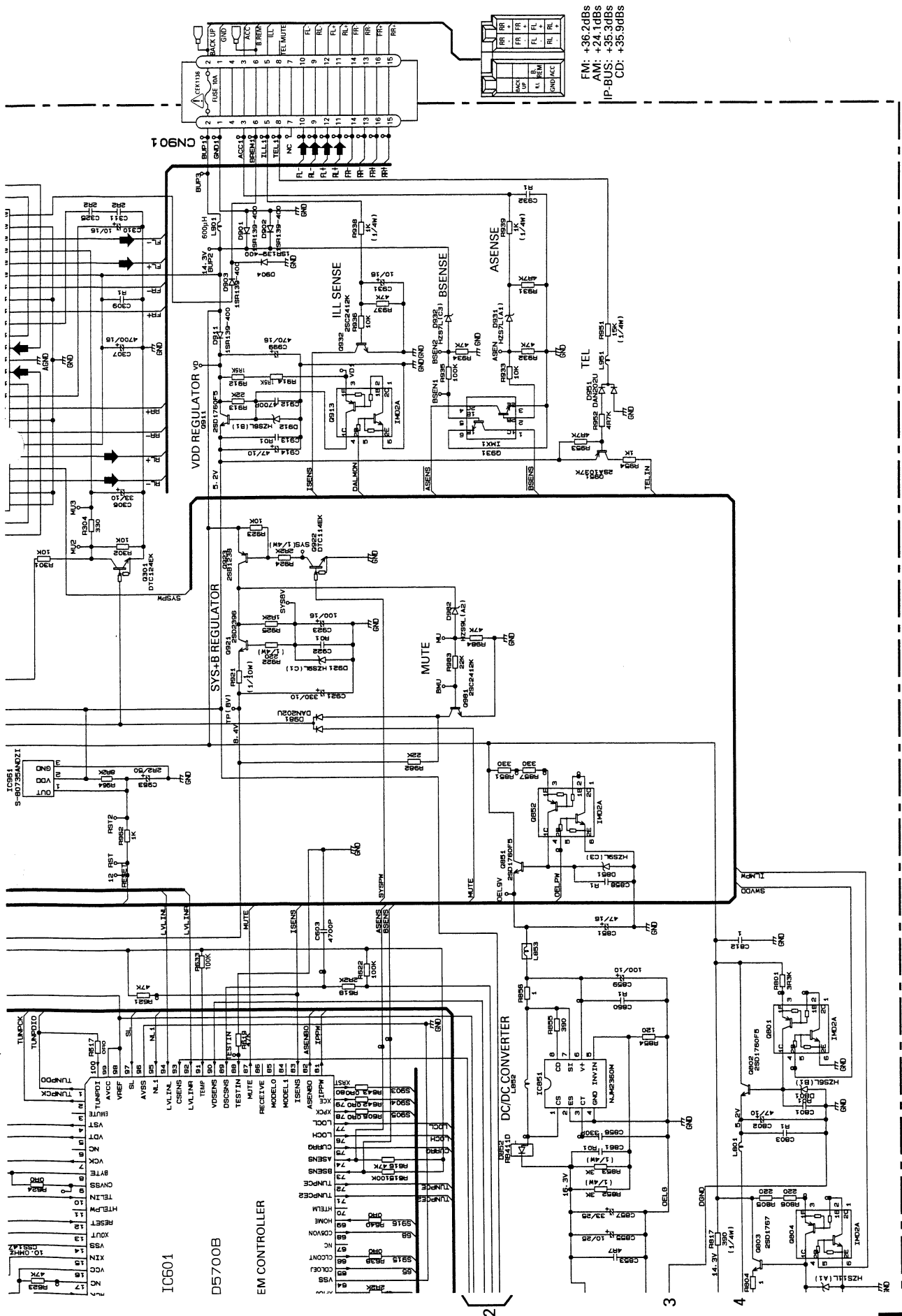
A-a B

A-a A-b

A TUNER AMP UNIT



A-b

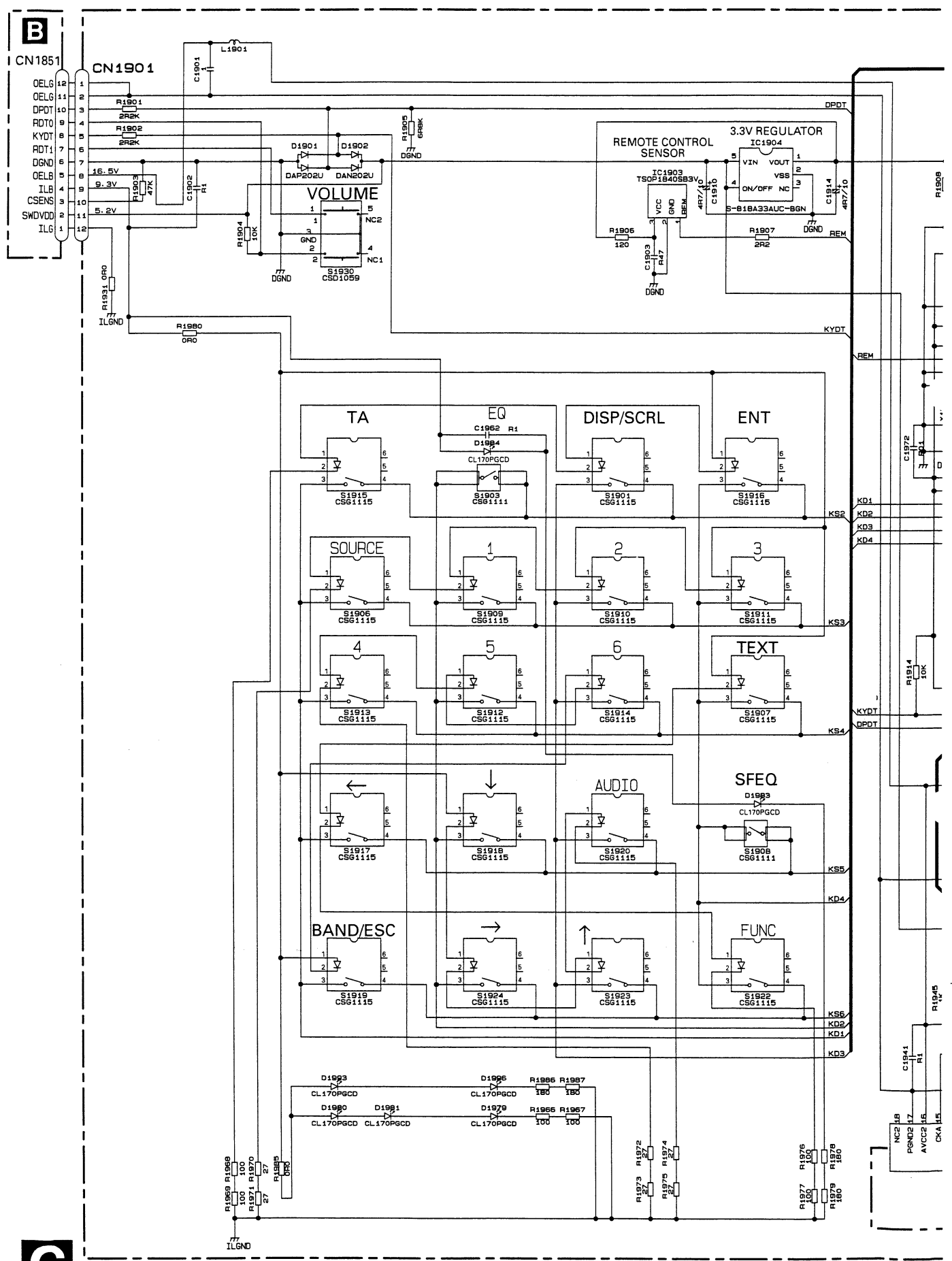


FM: +36.2dBs
AM: +24.1dBs
BUS: +35.3dBs
CD: +35.9dBs

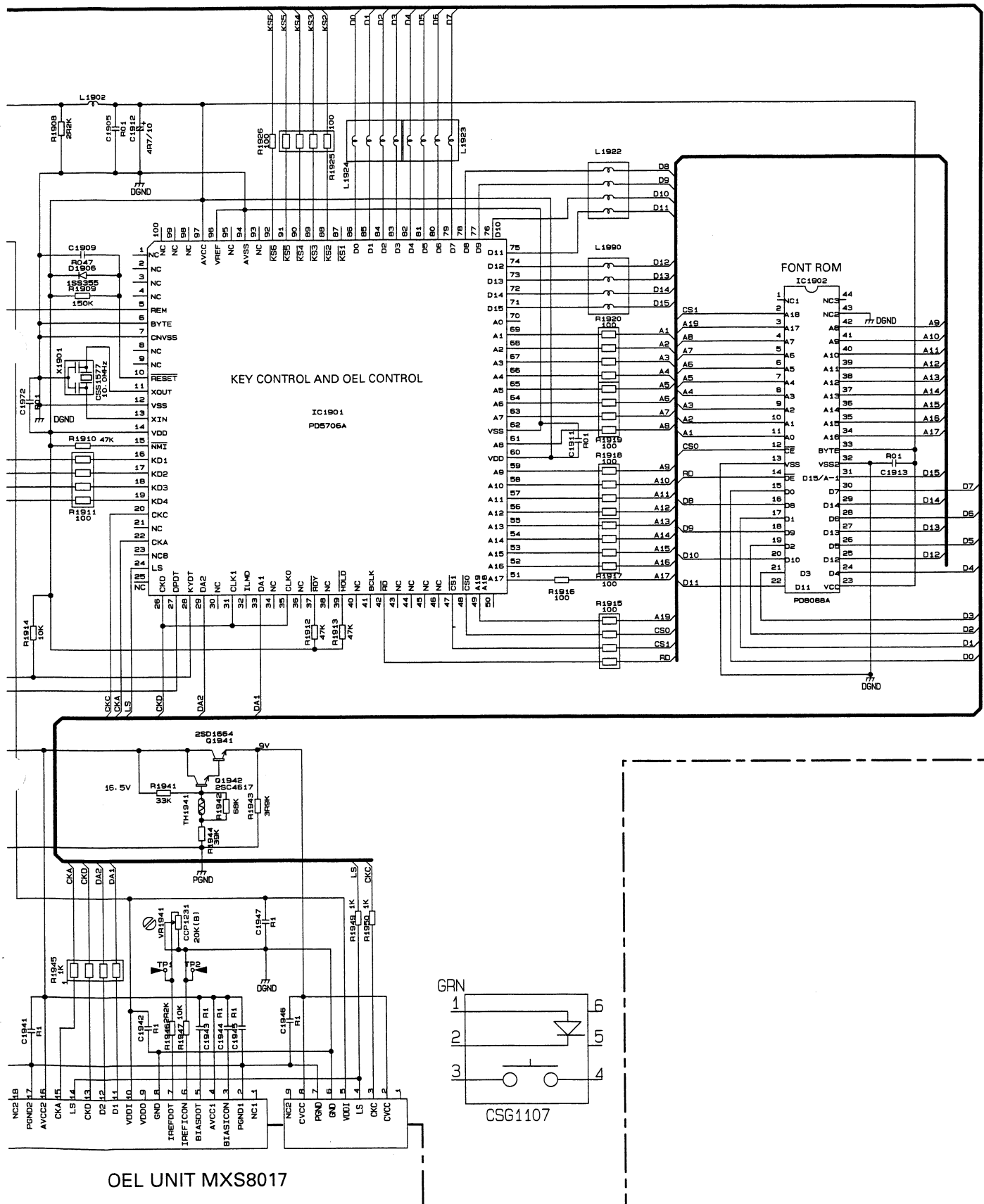
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DEH-P640OR

3.3 KEYBOARD UNIT



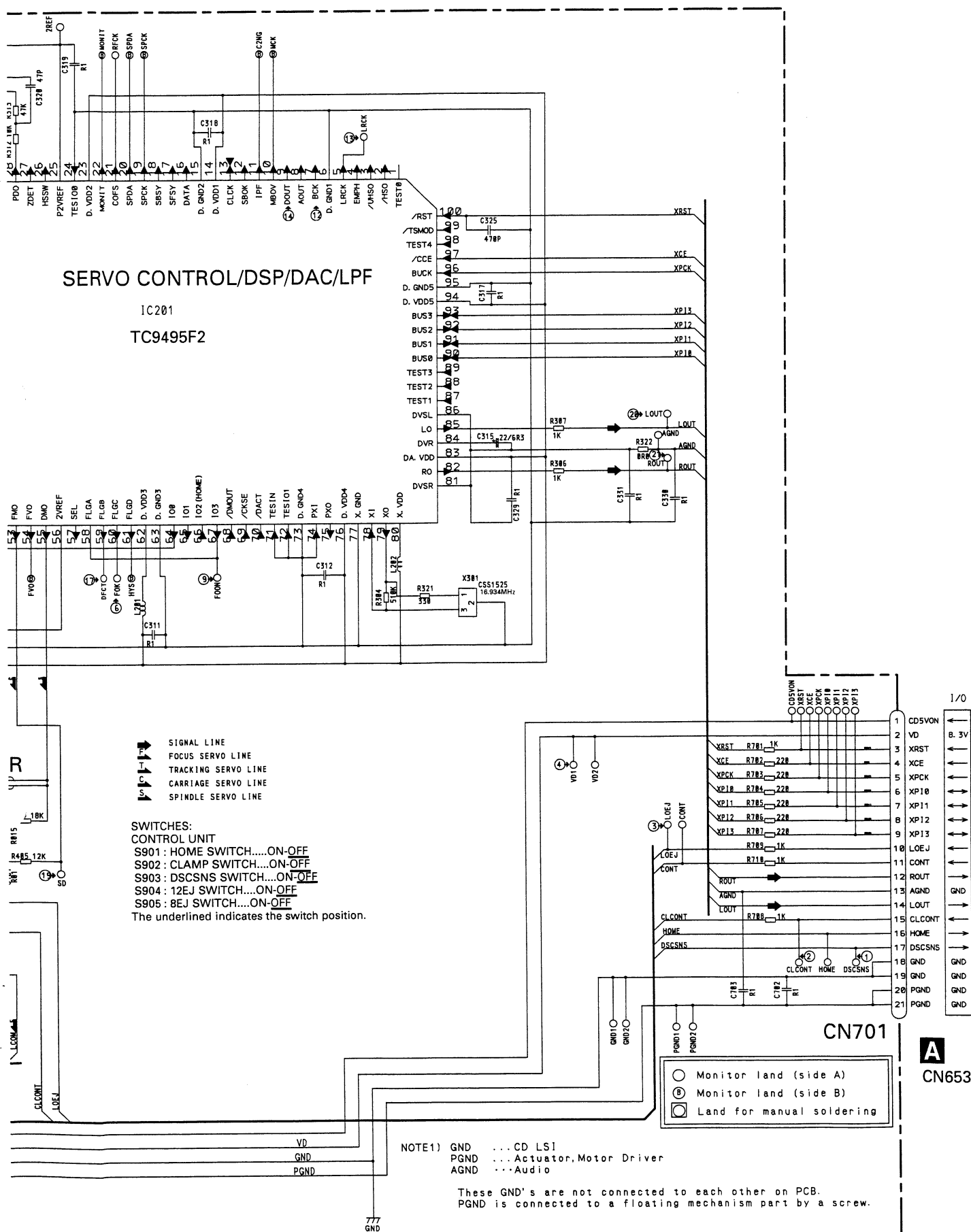
C KEYBOARD UNIT



D

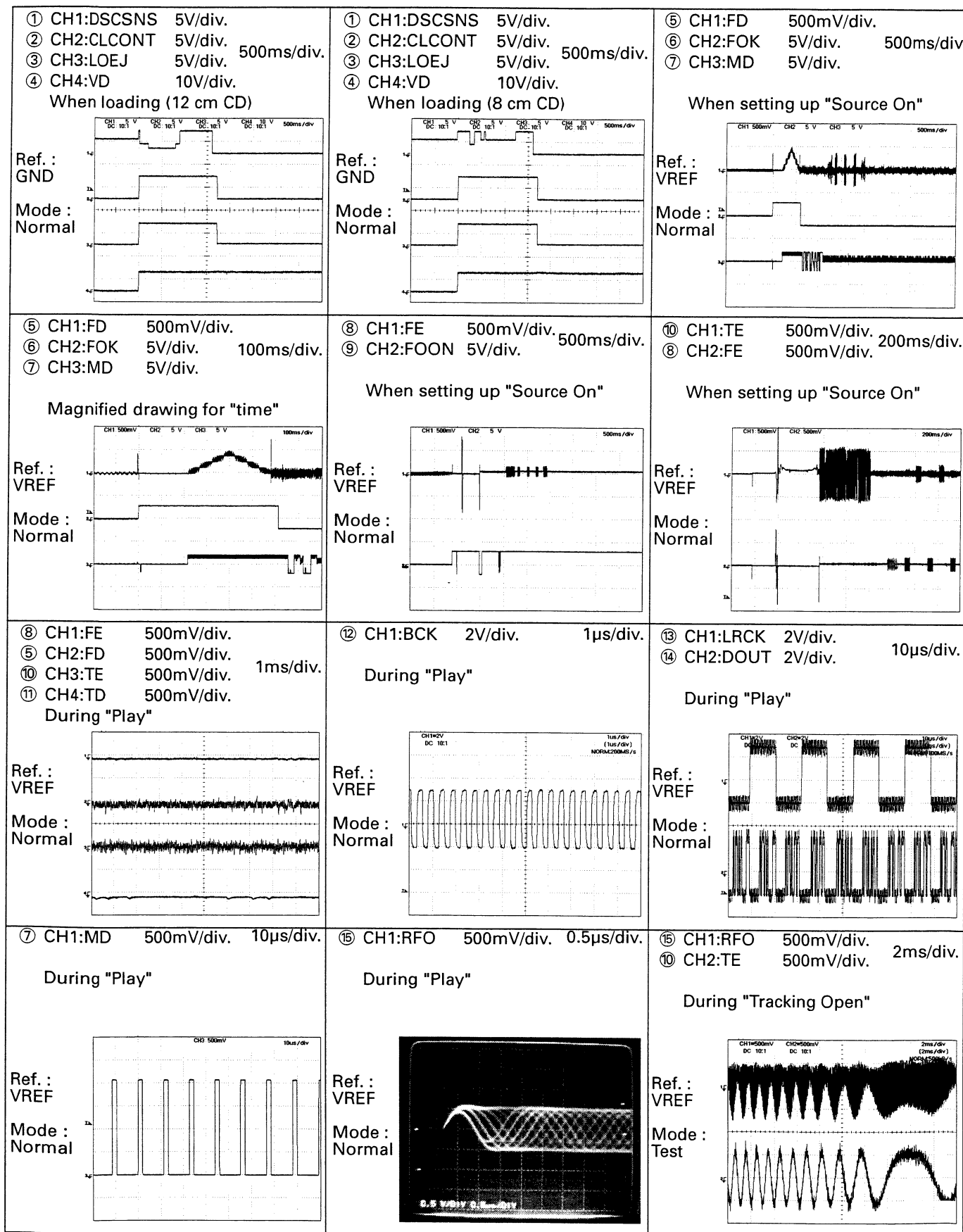
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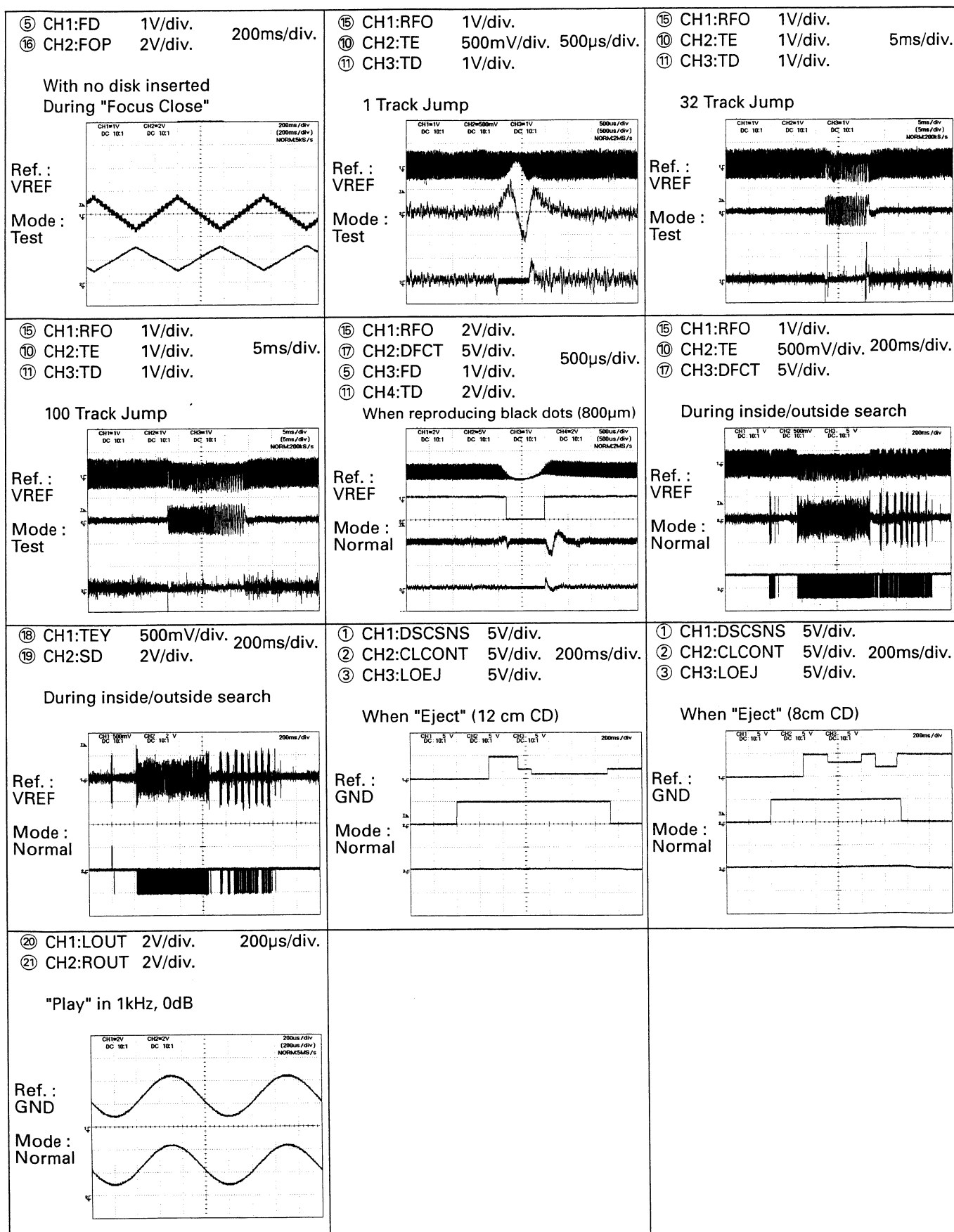




Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
VREF:2.1V

● Waveforms





4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

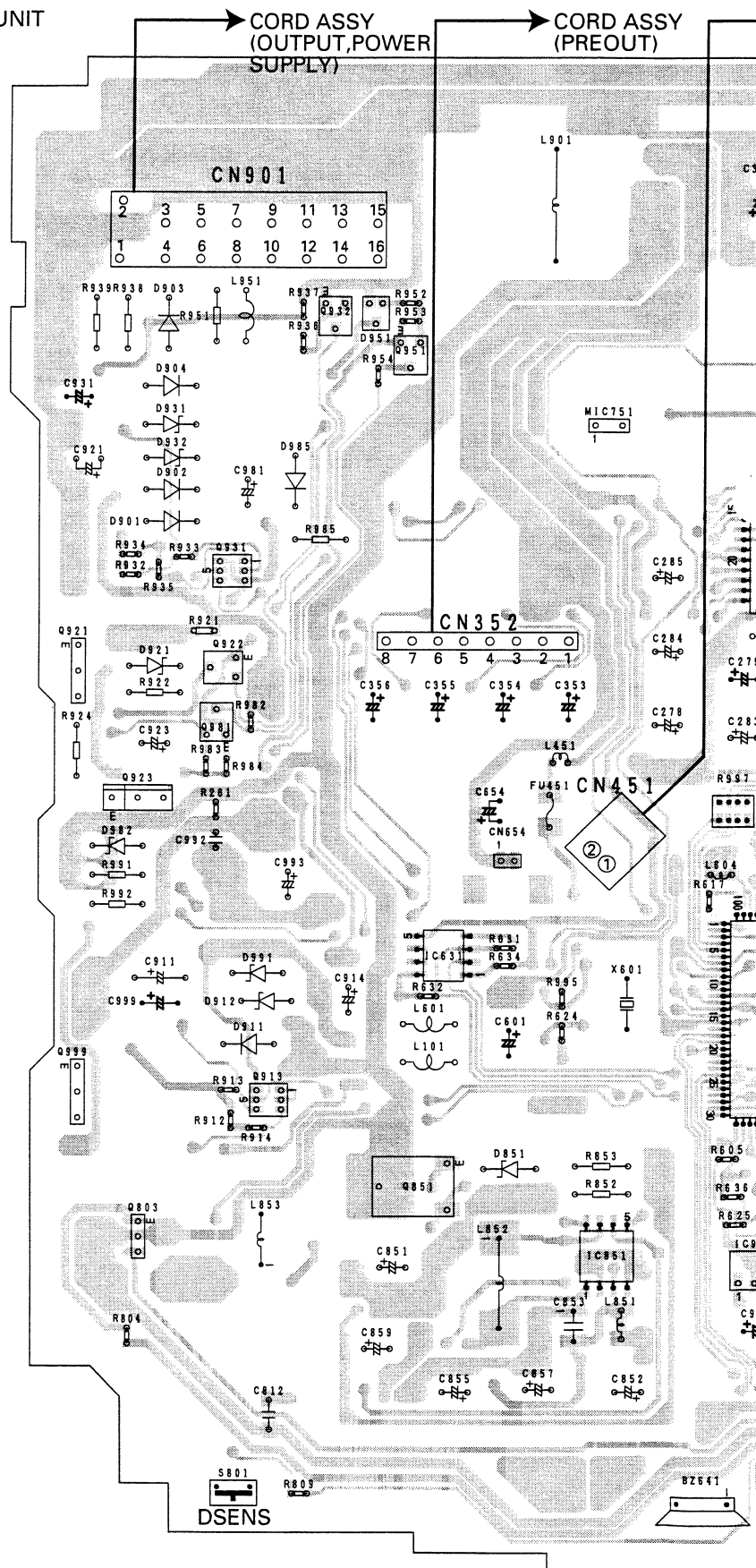
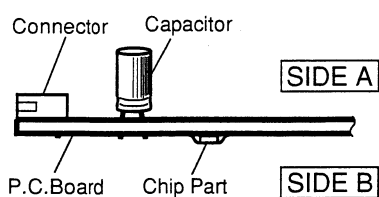
A TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

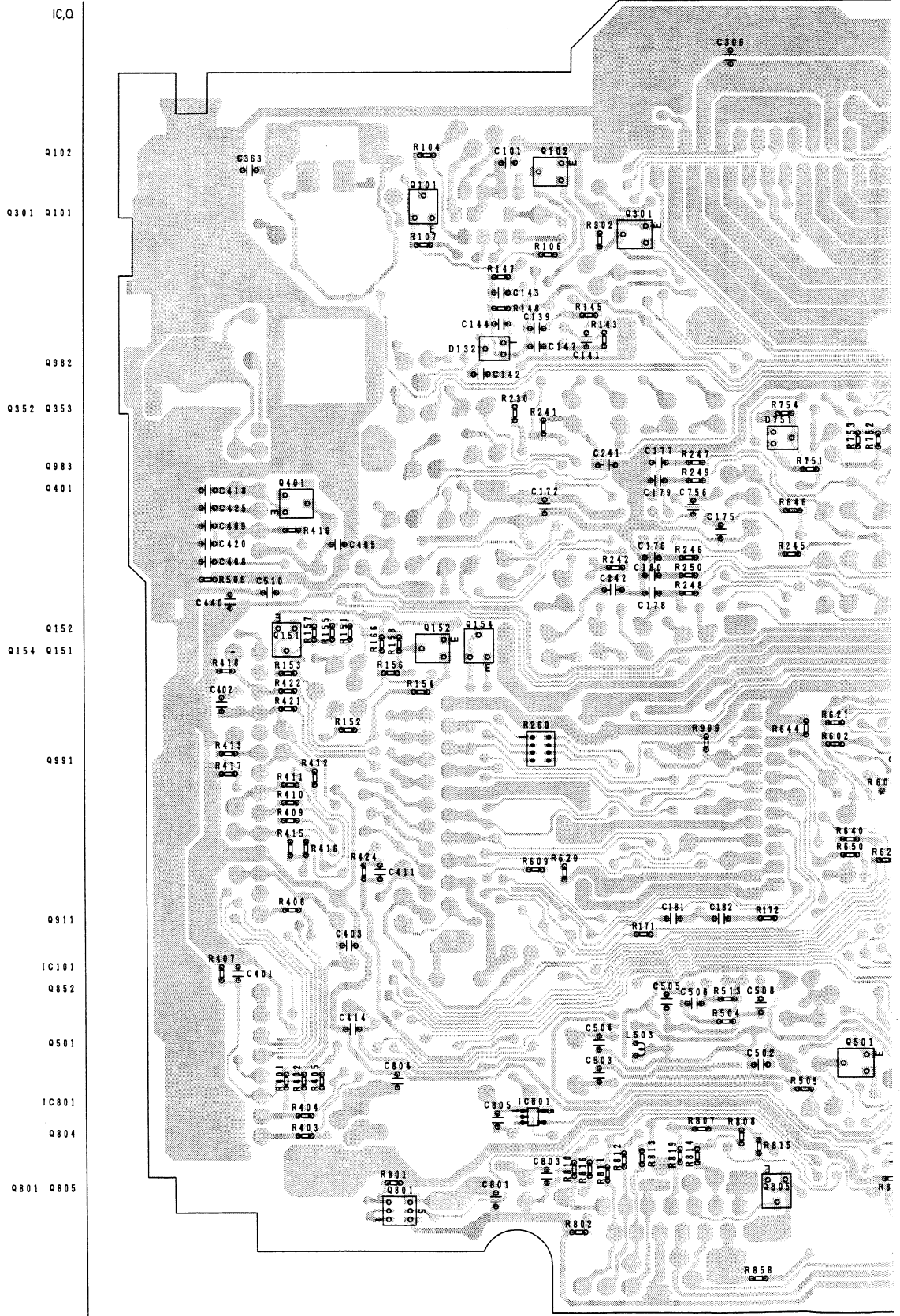
1. The parts mounted on this PCB include all necessary parts for several destination.

For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams



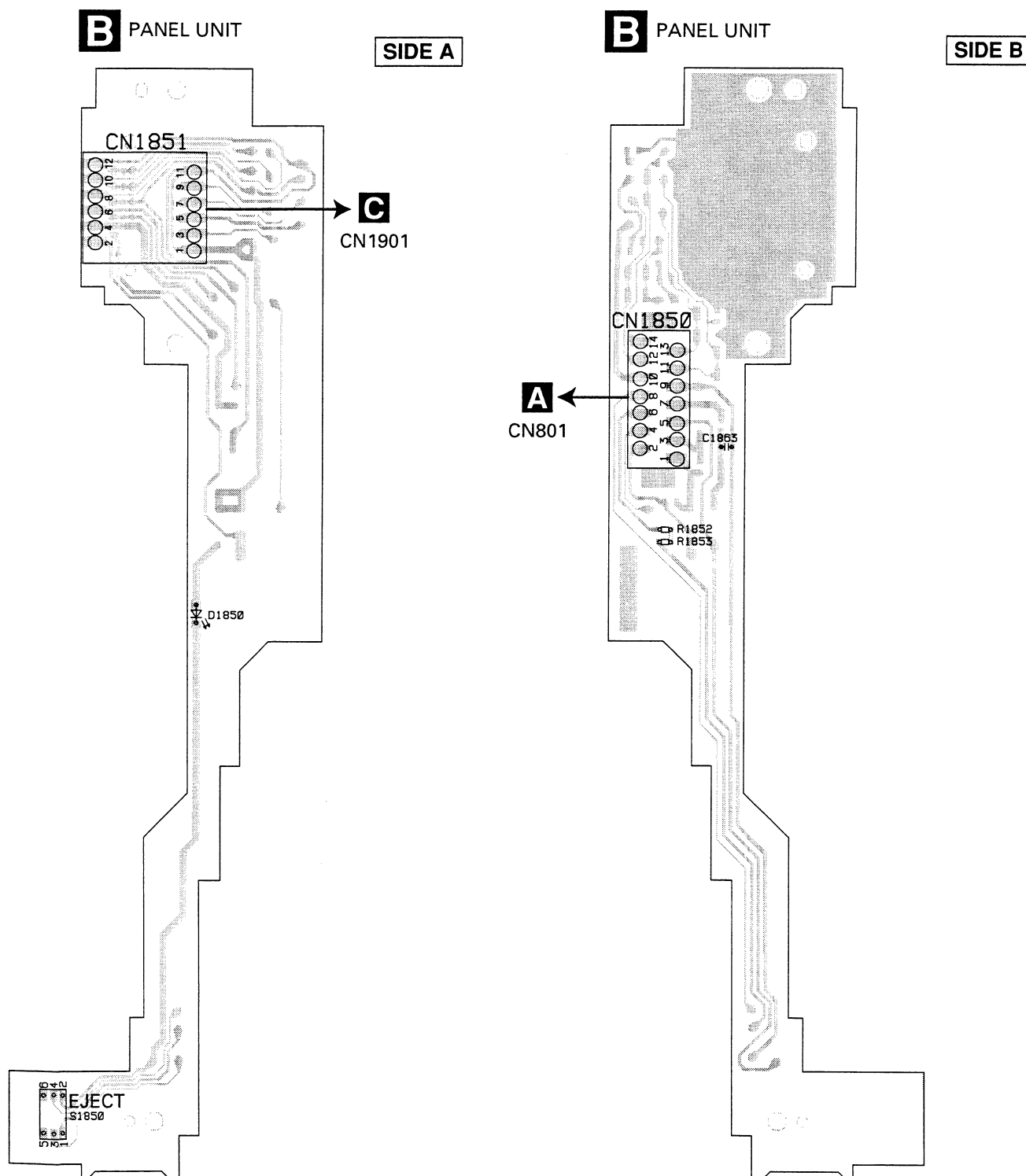
A TUNER AMP UNIT



1 2 3 4

DEH-P6400R

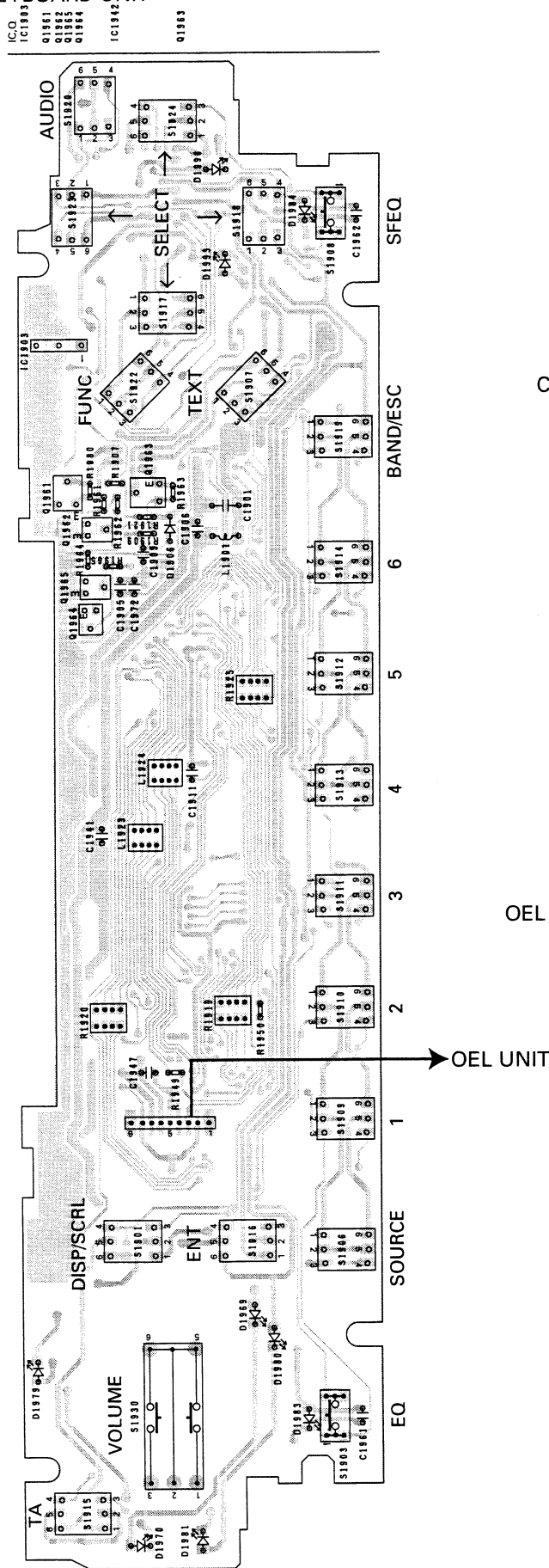
4.2 PANEL UNIT



4.3 KEYBOARD UNIT

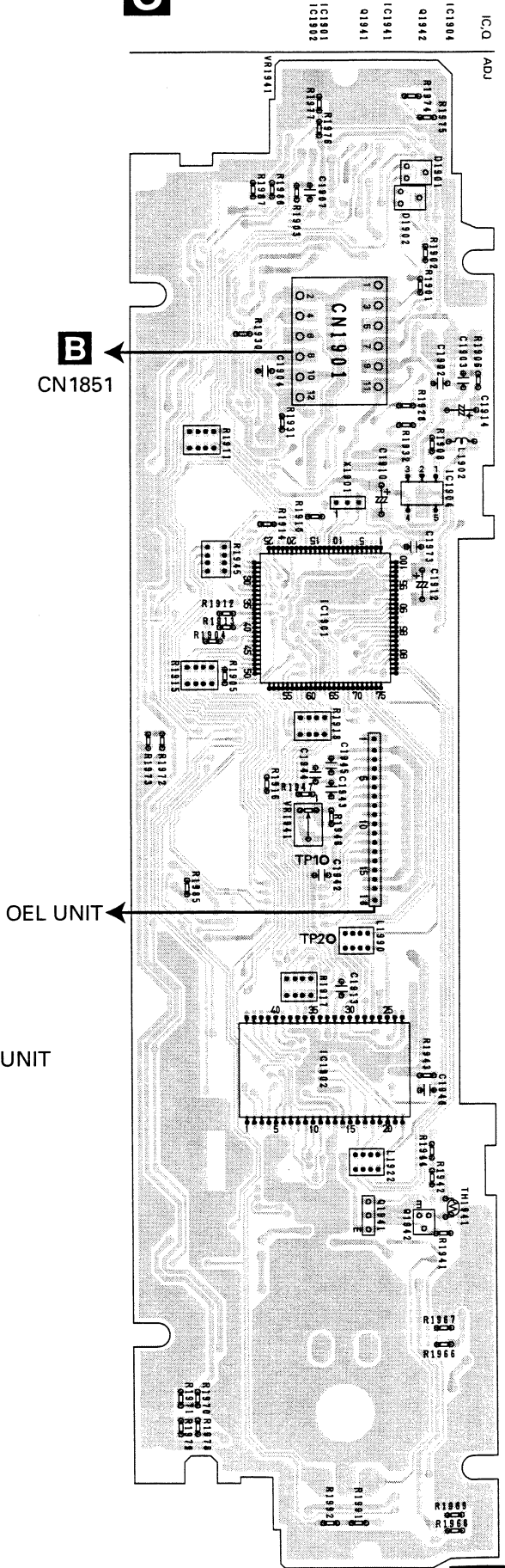
C KEYBOARD UNIT

SIDE A



C KEYBOARD UNIT

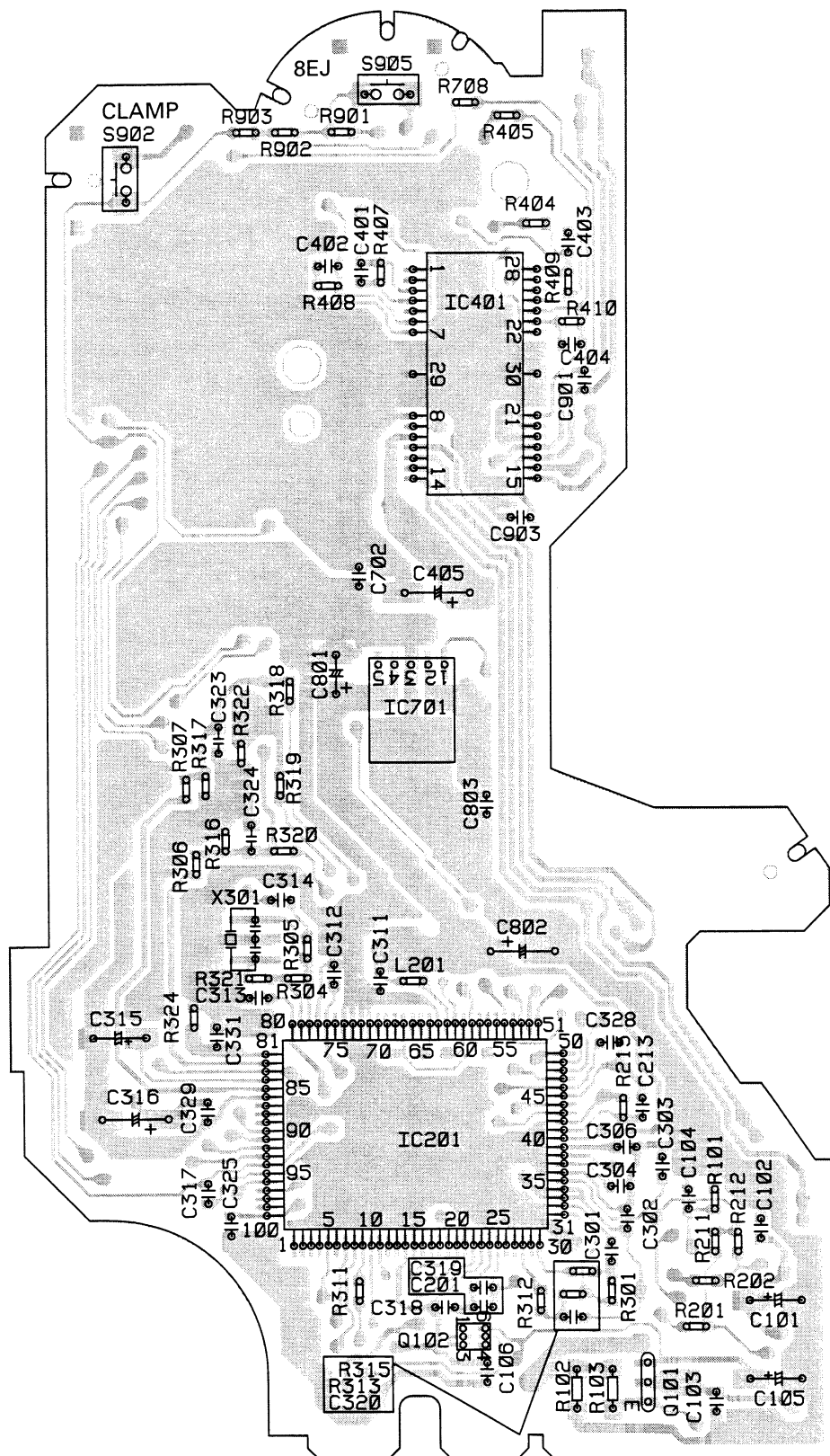
SIDE B





D CONTROL UNIT

SIDE B



IC, Q

IC401

IC701

IC201

Q102

Q101

5. ELECTRICAL PARTS LIST

NOTES:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/OSOOJ,RS1/OOSOOJ

Chip Capacitor (except for CQS.....)

CKS..... CCS..... CSZS.....

====Circuit Symbol and No.,==Part Name	Part No.	====Circuit Symbol and No.,==Part Name	Part No.
A Unit Number : CWM7984 Unit Name : Tuner Amp Unit		D 807 Diode	DAP202U
MISCELLANEOUS		D 808 Diode	HZS11L(A1)
IC 101 IC	HA12187FP	D 851 Diode	HZS9L(C3)
IC 132 IC	NJM4558MD	D 852 Diode	RB411D
IC 203 IC	PML008A	D 901 Diode	1SR139-400
IC 301 IC	PAL007A	D 902 Diode	1SR139-400
IC 501 IC	PM4009A	D 903 Diode	1SR139-400
		D 904 Diode	1SR139-400
		D 911 Diode	1SR139-400
		D 912 Diode	HZS6L(B1)
IC 601 IC	PD5700B	D 921 Diode	HZS9L(C1)
IC 631 IC	PDH0045A	D 931 Diode	HZS7L(A1)
IC 801 IC	TC7SET08FU	D 932 Diode	HZS7L(C3)
IC 851 IC	NJM2360M	D 951 Diode	DAN202U
IC 961 IC	S-80735ANDZI	D 981 Diode	DAN202U
Q 101 Transistor	2SA1037K	D 982 Diode	HZS9L(A2)
Q 102 Transistor	DTC124EK	D 991 Diode	HZS9L(B1)
Q 151 Transistor	2SD1757K	ZNR 451 Surge Protector	DSP-201M-A21F
Q 152 Transistor	2SD1757K	L 171 Inductor	CTF1530
Q 153 Transistor	IMH3A	L 401 Ferri-Inductor	LAU2R2K
Q 155 Transistor	2SC2412K	L 402 Ferri-Inductor	LAU4R7K
Q 301 Transistor	DTC124EK	L 403 Inductor	LAU1R0K
Q 351 Transistor	IMH3A	L 451 Inductor	CTF1378
Q 353 Transistor	IMH3A	L 501 Ferri-Inductor	LAU101K
Q 401 Transistor	2SC2412K	L 502 Ferri-Inductor	LAU2R2K
Q 402 Transistor	2SC2412K	L 503 Inductor	CTF1378
Q 501 Transistor	DTA124EK	L 601 Ferri-Inductor	LAU2R2K
Q 801 Transistor	IMD2A	L 801 Inductor	LAU100K
Q 802 Transistor	2SD1760F5	L 802 Ferri-Inductor	LAU2R2K
Q 803 Transistor	2SD1767	L 852 Inductor	CTF1510
Q 804 Transistor	IMD2A	L 853 Inductor	CTF1489
Q 805 Transistor	DTC143EK	L 901 Choke Coil 600μH	CTH1221
Q 851 Transistor	2SD1760F5	L 951 Ferri-Inductor	LAU2R2K
Q 852 Transistor	IMD2A	X 501 Crystal Resonator 3.648MHz	CSS1447
Q 911 Transistor	2SD1760F5	X 601 Radiator 10.00MHz	CSS1475
Q 913 Transistor	IMD2A	S 801 Switch(DSENS)	CSN1039
Q 921 Transistor	2SD2396	FU 451 Fuse 200mA	CEK1189
Q 922 Transistor	DTC114EK	BZ 641 FM/AM Tuner Unit	CWE1562
Q 923 Transistor	2SB1238	Buzzer	CPV1050
Q 931 Transistor	IMX1		
Q 932 Transistor	2SC2412K	RESISTORS	
Q 951 Transistor	2SA1037K	R 101	RS1/16S101J
Q 981 Transistor	2SC2412K	R 102	RS1/16S470J
Q 982 Transistor	IMD2A	R 103	RS1/16S101J
Q 991 Transistor	IMD2A	R 104	RS1/16S222J
Q 999 Transistor	2SD2396	R 105	RS1/16S103J
D 131 Diode Network	DA204U	R 106	RS1/16S562J
D 132 Diode Network	DA204U	R 107	RS1/16S332J
D 133 Diode	DAN202U	R 108	RS1/16S150J
D 134 Diode	DAP202U	R 109	RS1/16S181J
D 801 Diode	HZS6L(B1)	R 110	RS1/16S181J
D 803 Diode Network	DA204U	R 111	RS1/16S223J
D 804 Diode	DAN202U	R 112	RS1/16S223J
D 805 Diode	DAP202U	R 113	RS1/16S102J
D 806 Diode	DAN202U	R 114	RS1/16S102J
		R 143	RS1/16S104J

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
R 144	RS1/16S104J	R 422	RS1/16S681J
R 145	RS1/16S563J	R 424	RS1/16S393J
R 146	RS1/16S563J	R 426	RS1/16S153J
R 147	RS1/16S474J	R 427	RS1/16S474J
R 148	RS1/16S474J	R 428	RS1/16S681J
R 153	RS1/16S224J	R 452	RS1/16S102J
R 154	RS1/16S224J	R 453	RS1/16S0R0J
R 155	RS1/16S222J	R 501	RAB4C102J
R 156	RS1/16S222J	R 503	RS1/16S0R0J
R 157	RS1/16S223J	R 506	RS1/16S0R0J
R 158	RS1/16S223J	R 511	RS1/16S102J
R 159	RS1/16S224J	R 513	RS1/16S225J
R 160	RS1/16S473J	R 518	RS1/16S681J
R 161	RS1/16S162J	R 551	RS1/16S0R0J
R 162	RS1/16S162J	R 553	RS1/16S0R0J
R 163	RS1/16S272J	R 606	RS1/16S0R0J
R 164	RS1/16S272J	R 607	RS1/16S0R0J
R 165	RS1/16S104J	R 608	RS1/16S104J
R 166	RS1/16S104J	R 613	RS1/16S222J
R 171	RS1/16S0R0J	R 614	RS1/16S222J
R 172	RS1/16S0R0J	R 615	RS1/16S104J
R 230	RS1/16S0R0J	R 616	RS1/16S473J
R 241	RS1/16S0R0J	R 617	RS1/16S0R0J
R 242	RS1/16S0R0J	R 618	RS1/16S222J
R 247	RS1/16S101J	R 619	RS1/16S473J
R 248	RS1/16S101J	R 620	RS1/16S472J
R 249	RS1/16S101J	R 621	RS1/16S473J
R 250	RS1/16S101J	R 622	RS1/16S104J
R 287	RS1/16S0R0J	R 623	RS1/16S473J
R 288	RS1/16S0R0J	R 624	RS1/16S0R0J
R 289	RS1/16S0R0J	R 626	RS1/16S104J
R 290	RS1/16S0R0J	R 630	RS1/16S104J
R 301	RS1/16S103J	R 631	RS1/16S102J
R 302	RS1/16S103J	R 632	RS1/16S104J
R 304	RS1/16S331J	R 633	RS1/16S104J
R 351	RS1/16S821J	R 634	RS1/16S473J
R 352	RS1/16S821J	R 638	RS1/16S0R0J
R 355	RS1/16S821J	R 640	RS1/16S0R0J
R 356	RS1/16S821J	R 641	RS1/16S102J
R 357	RS1/16S223J	R 642	RS1/16S0R0J
R 358	RS1/16S223J	R 643	RS1/16S0R0J
R 361	RS1/16S223J	R 650	RS1/16S222J
R 362	RS1/16S223J	R 651	RS1/16S222J
R 363	RS1/16S0R0J	R 653	RS1/16S0R0J
R 368	RS1/16S0R0J	R 801	RS1/16S332J
R 401	RS1/16S473J	R 804	RS1/16S1R0J
R 402	RS1/16S473J	R 805	RS1/16S221J
R 403	RS1/16S681J	R 806	RS1/16S221J
R 404	RS1/16S681J	R 807	RS1/16S473J
R 405	RS1/16S681J	R 808	RS1/16S473J
R 406	RS1/16S102J	R 809	RS1/16S102J
R 407	RS1/16S473J	R 810	RS1/16S222J
R 409	RS1/16S681J	R 811	RS1/16S222J
R 410	RS1/16S103J	R 812	RS1/16S222J
R 411	RS1/16S681J	R 813	RS1/16S222J
R 412	RS1/16S681J	R 814	RS1/16S222J
R 413	RS1/16S681J	R 815	RS1/16S473J
R 414	RS1/16S473J	R 816	RS1/16S104J
R 415	RS1/16S472J	R 817	RD1/4PU391J
R 416	RS1/16S473J	R 819	RS1/16S222J
R 417	RS1/16S473J	R 820	RS1/16S222J
R 418	RS1/16S473J	R 851	RS1/16S331J
R 419	RS1/16S222J	R 852	RD1/4PU302J
R 420	RS1/16S222J	R 853	RD1/4PU302J
R 421	RS1/16S681J	R 854	RS1/16S121J

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====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
R 855	RS1/16S391J	C 210	CEJQ1R0M50
R 856	RS1/16S1R0J	C 211	CEJQNP4R7M16
R 857	RS1/16S331J	C 212	CEJQNP4R7M16
R 912	RS1/16S152J	C 213	CEJQNP4R7M16
R 913	RS1/16S223J	C 214	CEJQNP4R7M16
R 914	RS1/16S152J	C 215	CEJQNP4R7M16
R 921	RS1/10S1R0J	C 216	CEJQNP4R7M16
R 922	RD1/4PU221J	C 306	CEHAR330M10
R 923	RS1/16S103J	C 307	CCH1367
R 924	RD1/4PU222J	C 309	CKSRYB104K16
R 925	RS1/16S122J	C 310	CEHAR100M16
R 931	RS1/16S472J	C 311	CKSQYB225K10
R 932	RS1/16S473J	C 313	CKSRYB474K10
R 933	RS1/16S103J	C 314	CKSRYB474K10
R 934	RS1/16S473J	C 315	CKSRYB474K10
R 935	RS1/16S104J	C 316	CKSRYB474K10
R 936	RS1/16S103J	C 321	CKSRYB474K10
R 937	RS1/16S473J	C 322	CKSRYB474K10
R 938	RD1/4PU102J	C 323	CKSRYB474K10
R 939	RD1/4PU102J	C 324	CKSRYB474K10
R 951	RD1/4PU153J	C 325	CKSQYB225K10
R 952	RS1/16S472J	C 351	CEJQ100M16
R 953	RS1/16S472J	C 352	CEJQ100M16
R 954	RS1/16S102J	C 355	CEJQ100M16
R 962	RS1/16S102J	C 356	CEJQ100M16
R 964	RS1/16S822J	C 401	CKSRYB182K50
R 982	RS1/16S223J	C 403	CKSRYB473K25
R 983	RS1/16S223J	C 404	CEJQ101M6R3
R 984	RS1/16S473J	C 405	CKSRYB103K50
R 985	RD1/4PU102J	C 406	CEJQ220M10
R 991	RD1/4PU221J	C 408	CKSRYB223K50
R 992	RD1/4PU221J	C 409	CKSRYB223K50
R 993	RS1/16S472J	C 411	CKSRYB472K50
R 994	RS1/16S222J	C 413	CKSRYB472K50
R 995	RS1/16S0R0J	C 425	CKSRYB102K50
R 997	RAB4C102J	C 440	CKSRYB103K50
		C 453	CKSRYB224K16
		C 501	CEJQ220M6R3
		C 502	CKSRYB104K16
		C 503	CCSRCH270J50
C 101	CKSRYB104K16	C 504	CCSRCH270J50
C 102	CKSRYB104K16	C 505	CKSRYB104K16
C 139	CKSRYB104K16	C 506	CKSRYB471K50
C 140	CKSRYB104K16	C 507	CKSRYB471K50
C 141	CKSRYB104K16	C 508	CKSRYB104K16
C 142	CKSRYB104K16	C 509	CEJQ220M6R3
C 143	CKSRYB474K10	C 510	CCSRCH101J50
C 144	CKSRYB474K10	C 511	CKSRYB102K50
C 145	CCSRCH101J50	C 601	CEJQ4R7M35
C 146	CCSRCH101J50	C 602	CKSRYB102K50
C 147	CKSRYB103K50	C 603	CKSRYB472K50
C 151	CEJQ1R0M50	C 604	CCSRCH180J50
C 152	CEJQ1R0M50	C 605	CCSRCH220J50
C 153	CKSRYB223K25	C 801	CKSRYB103K50
C 161	CKSRYB123K25	C 802	CEJQ470M10
C 162	CKSRYB123K25	C 803	CKSRYB104K16
C 171	CEJQ470M10	C 805	CKSRYB103K25
C 172	CKSRYB104K16	C 806	CKSRYB473K25
C 173	CEJQ100M16	C 812	CKSYB105K25
C 177	CCSRCH100D50	C 851	CEJQ470M16
C 178	CCSRCH100D50	C 853	CCG1111
C 179	CCSRCH100D50	C 855	CEJQ100M25
C 180	CCSRCH100D50	C 856	CCSRCH331J50
C 191	CEJQ1R0M50	C 857	CEJQ330M25
C 192	CEJQ1R0M50	C 858	CKSRYB104K16
C 205	CEJQR22M50		
C 206	CEJQR22M50		
C 207	CEJQ1R0M50		
C 208	CEJQ1R0M50		
C 209	CEJQ1R0M50		

====Circuit Symbol and No.==Part Name

Part No.

C	859		CEJQ101M10
C	860		CKSRYB104K16
C	861		CKSRYB103K50
C	912		CKSRYB472K50
C	913		CKSRYB103K50
C	914		CEJQ470M10
C	921	330μF/10V	CCH1181
C	922		CKSRYB103K50
C	923		CEJQ101M16
C	931		CEJQ100M16
C	932		CKSRYB104K16
C	963		CEJQ2R2M50
C	991		CKSRYB473K25
C	992		CKSRYB102K50
C	993		CEJQ101M10
C	999	470μF/16V	CCH1183

C Unit Number : CWM7990
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	1901	IC	PD5706A
IC	1902	IC	PD8088A
IC	1903	IC	TSOP1840SB3V
IC	1904	IC	S-818A33AUC-BGN
Q	1941	Transistor	2SD1664
Q	1942	Transistor	2SC4617
D	1901	Diode	DAP202U
D	1902	Diode	DAN202U
D	1906	Diode	1SS355
D	1979	LED	CL170PGCD
D	1980	LED	CL170PGCD
D	1981	LED	CL170PGCD
D	1983	LED	CL170PGCD
D	1984	LED	CL170PGCD
D	1993	LED	CL170PGCD
D	1996	LED	CL170PGCD
L	1901	Inductor	CTF1530
L	1902	Inductor	CTF1530
L	1922	Inductor-Array	CTF1421
L	1923	Inductor-Array	CTF1421
L	1924	Inductor-Array	CTF1421
L	1990	Inductor-Array	CTF1421
TH	1941	Thermistor	CCX1037
X	1901	Radiator 10.0MHz	CSS1577
S	1901	Switch	CSG1107
S	1903	Push Switch	CSG1111
S	1906	Switch	CSG1107
S	1907	Switch	CSG1107
S	1908	Push Switch	CSG1111
S	1909	Switch	CSG1107
S	1910	Switch	CSG1107
S	1911	Switch	CSG1107
S	1912	Switch	CSG1107
S	1913	Switch	CSG1107
S	1914	Switch	CSG1107
S	1915	Switch	CSG1107
S	1916	Switch	CSG1107
S	1917	Switch	CSG1107
S	1918	Switch	CSG1107
S	1919	Switch	CSG1107
S	1920	Switch	CSG1107
S	1922	Switch	CSG1107
S	1923	Switch	CSG1107
S	1924	Switch	CSG1107
S	1930	Encoder(VOLUME)	CSD1059

====Circuit Symbol and No.==Part Name

Part No.

VR 1941 Semi-fixed 20kΩ(B)
OEL Unit

CCP1231
MXS8017

RESISTORS

R	1901	RS1/16S222J
R	1902	RS1/16S222J
R	1903	RS1/16S473J
R	1904	RS1/16S103J
R	1905	RS1/16S682J
R	1906	RS1/16S121J
R	1907	RS1/16S2R2J
R	1908	RS1/16S222J
R	1909	RS1/16S154J
R	1910	RS1/16S473J
R	1911	RAB4C101J
R	1912	RS1/16S473J
R	1913	RS1/16S473J
R	1914	RS1/16S103J
R	1915	RAB4C101J
R	1916	RS1/16S101J
R	1917	RAB4C101J
R	1918	RAB4C101J
R	1919	RAB4C101J
R	1920	RAB4C101J
R	1925	RAB4C101J
R	1926	RS1/16S101J
R	1931	RS1/16S0R0J
R	1941	RS1/16S333J
R	1942	RS1/16S683J
R	1943	RS1/16S392J
R	1944	RS1/16S393J
R	1945	RAB4C102J
R	1946	RS1/16S222J
R	1947	RS1/16S103J
R	1949	RS1/16S102J
R	1950	RS1/16S102J
R	1966	RS1/16S101J
R	1967	RS1/16S101J
R	1968	RS1/16S101J
R	1969	RS1/16S101J
R	1970	RS1/16S270J
R	1971	RS1/16S270J
R	1972	RS1/16S270J
R	1973	RS1/16S270J
R	1974	RS1/16S270J
R	1975	RS1/16S270J
R	1976	RS1/16S101J
R	1977	RS1/16S101J
R	1978	RS1/16S181J
R	1979	RS1/16S181J
R	1980	RS1/16S0R0J
R	1985	RS1/16S0R0J
R	1986	RS1/16S181J
R	1987	RS1/16S181J

CAPACITORS

C	1901	CKSYB105K25
C	1902	CKSRYB104K16
C	1903	CKSRYB474K10
C	1905	CKSRYB103K25
C	1909	CKSRYB473K16
C	1910	CSZSR4R7M10
C	1911	CKSRYB103K25
C	1912	CSZSR4R7M10
C	1913	CKSRYB103K50
C	1914	CSZSR4R7M10

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====Circuit Symbol and No.====Part Name

C 1941
C 1942
C 1943
C 1944
C 1945

Part No.

CKSRYB104K25
CKSRYB104K16
CKSRYB104K25
CKSRYB104K25
CKSRYB104K25

C 1946
C 1947
C 1972

CKSRYB104K16
CKSRYB104K25
CKSRYB103K25

B Unit Number : CWM7986
Unit Name : Panel Unit

D 1850 LED
S 1850 Push Switch(EJECT)
R 1852
R 1853
C 1863

CL220PGC
CSG1112
RS1/16S101J
RS1/16S101J
CKSRYB223K50

D Unit Number : CWX2481
Unit Name : Control Unit

MISCELLANEOUS

IC 101 IC
IC 201 IC
IC 401 IC
IC 701 IC
Q 101 Transistor

Q 102 Transistor
L 201 Inductor
L 202 Inductor
X 301 Ceramic Resonator 16.934MHz
S 901 Spring Switch(HOME)

S 902 Spring Switch(CLAMP)
S 903 Spring Switch(DSCSNS)
S 904 Spring Switch(12EJ)
S 905 Spring Switch(8EJ)

TA2153FN
TC9495F2
BA5996FM
BA05SFP
2SD1664

UMD2N
CTF1546
CTF1546
CSS1525
CSN1051

CSN1052
CSN1051
CSN1052
CSN1051

RESISTORS

R 101
R 102
R 103
R 201
R 202

R 203
R 204
R 206
R 208
R 209

R 210
R 211
R 212
R 213
R 215

R 216
R 301
R 302
R 303
R 304

R 306
R 307
R 312
R 313
R 315

R 321
R 322
R 323
R 401
R 402

RS1/16S222J
RS1/8S120J
RS1/8S100J
RS1/16S513J
RS1/16S513J

RS1/16S823J
RS1/16S823J
RS1/16S823J
RS1/16S124J
RS1/16S183J

RS1/16S153J
RS1/16S103J
RS1/16S103J
RS1/16S124J
RS1/16S0R0J

RS1/16S471J
RS1/16S333J
RS1/16S332J
RS1/16S332J
RS1/16S514J

RS1/16S102J
RS1/16S102J
RS1/16S103J
RS1/16S473J
RS1/16S334J

RS1/16S331J
RS1/16S0R0J
RS1/16S332J
RS1/16S684J
RS1/16S103J

====Circuit Symbol and No.====Part Name

R 403
R 404
R 405
R 407
R 408

R 409
R 410
R 701
R 702
R 703

R 704
R 705
R 706
R 707
R 708

R 709
R 710
R 901
R 902
R 903

Part No.

RS1/16S103J
RS1/16S183J
RS1/16S123J
RS1/16S622J
RS1/16S622J

RS1/16S113J
RS1/16S752J
RS1/16S102J
RS1/16S221J
RS1/16S221J

RS1/16S221J
RS1/16S221J
RS1/16S221J
RS1/16S221J
RS1/16S102J

RS1/16S102J
RS1/16S102J
RS1/16S104J
RS1/16S473J
RS1/16S273J

CAPACITORS

C 101
C 102
C 103
C 104
C 105

C 106
C 107
C 201
C 202
C 204

C 205
C 206
C 207
C 208
C 209

C 210
C 211
C 301
C 302
C 303

C 304
C 305
C 306
C 307
C 308

C 309
C 310
C 311
C 312
C 315

C 317
C 318
C 319
C 320
C 325

C 328
C 329
C 330
C 331
C 401

C 402
C 403
C 404
C 405
C 702

CEV470M6R3
CKSRYB102K50
CKSRYB104K16
CKSRYB224K16
CEV470M6R3

CKSRYB104K16
CKSRYB105K6R3
CKSRYB104K16
CCSRCH560J50
CKSRYB224K16

CKSRYB224K16
CKSRYB273K25
CKSRYB273K25
CKSRYB104K16
CKSRYB104K16

CCSRCK2R0C50
CCSRCH220J50
CKSRYB153K25
CKSRYB104K16
CKSRYB103K50

CKSRYB103K50
CKSRYB104K16
CKSRYB104K16
CKSRYB333K16
CKSRYB104K16

CKSRYB473K16
CKSRYB473K16
CKSRYB104K16
CKSRYB104K16
CEV220M6R3

CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CCSRCH470J50
CKSRYB471K50

CKSRYB472K50
CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CKSRYB221K50

CKSRYB221K50
CKSRYB153K25
CKSRYB103K50
CEV101M10
CKSRYB104K16

====Circuit Symbol and No.====Part Name		Part No.
C	703	CKSRYB104K16
C	801	CCH1349
C	802	CEV101M10
C	803	CKSRYB224K16

Miscellaneous Parts List

		Pickup Unit(Service)(P9)	CXX1480
M	1	Motor Unit(SPINDLE)	CXB6007
M	2	Motor Unit(LOADING/CARRIAGE)	CXB5903

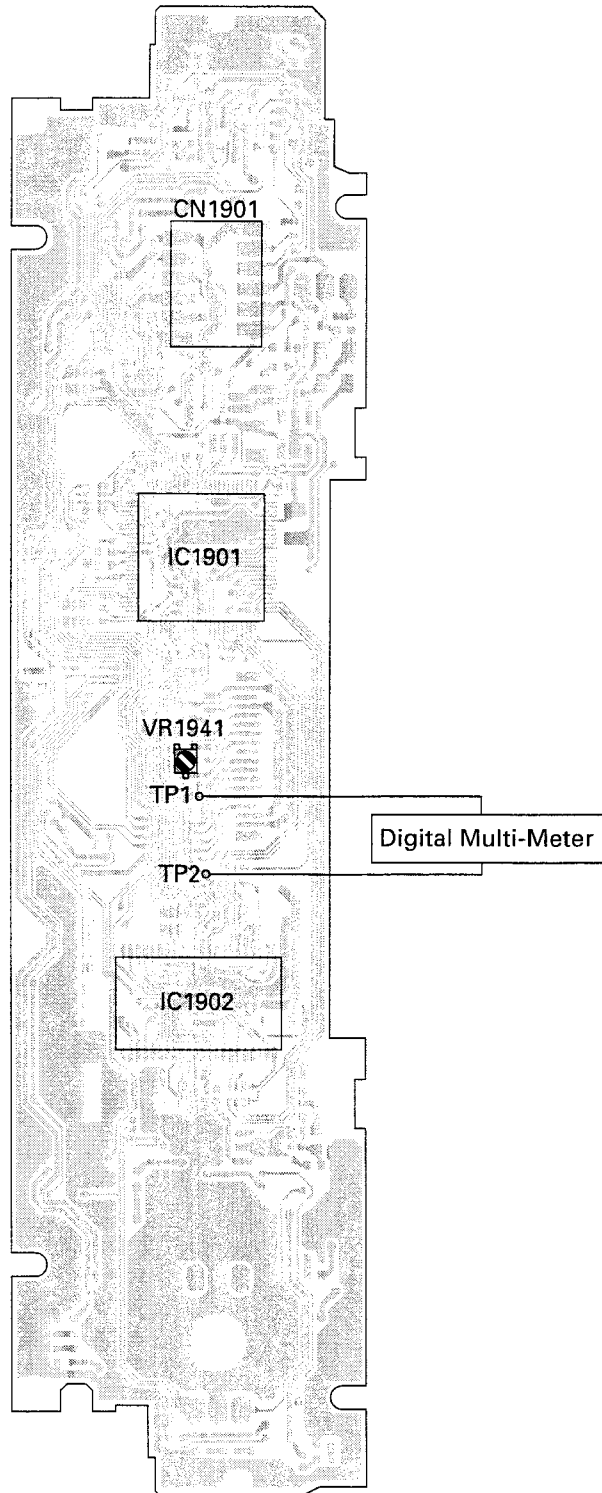
6. ADJUSTMENT

6.1 OEL UNIT ADJUSTMENT



● Adjustment point

KEYBOARD UNIT (SIDE B)



<When the OEL Unit has been replaced>

1. Use VR1941 to adjust the resistance between TP1 and TP2 to 6.60k Ω .

6.2 CD ADJUSTMENT

1) Precautions

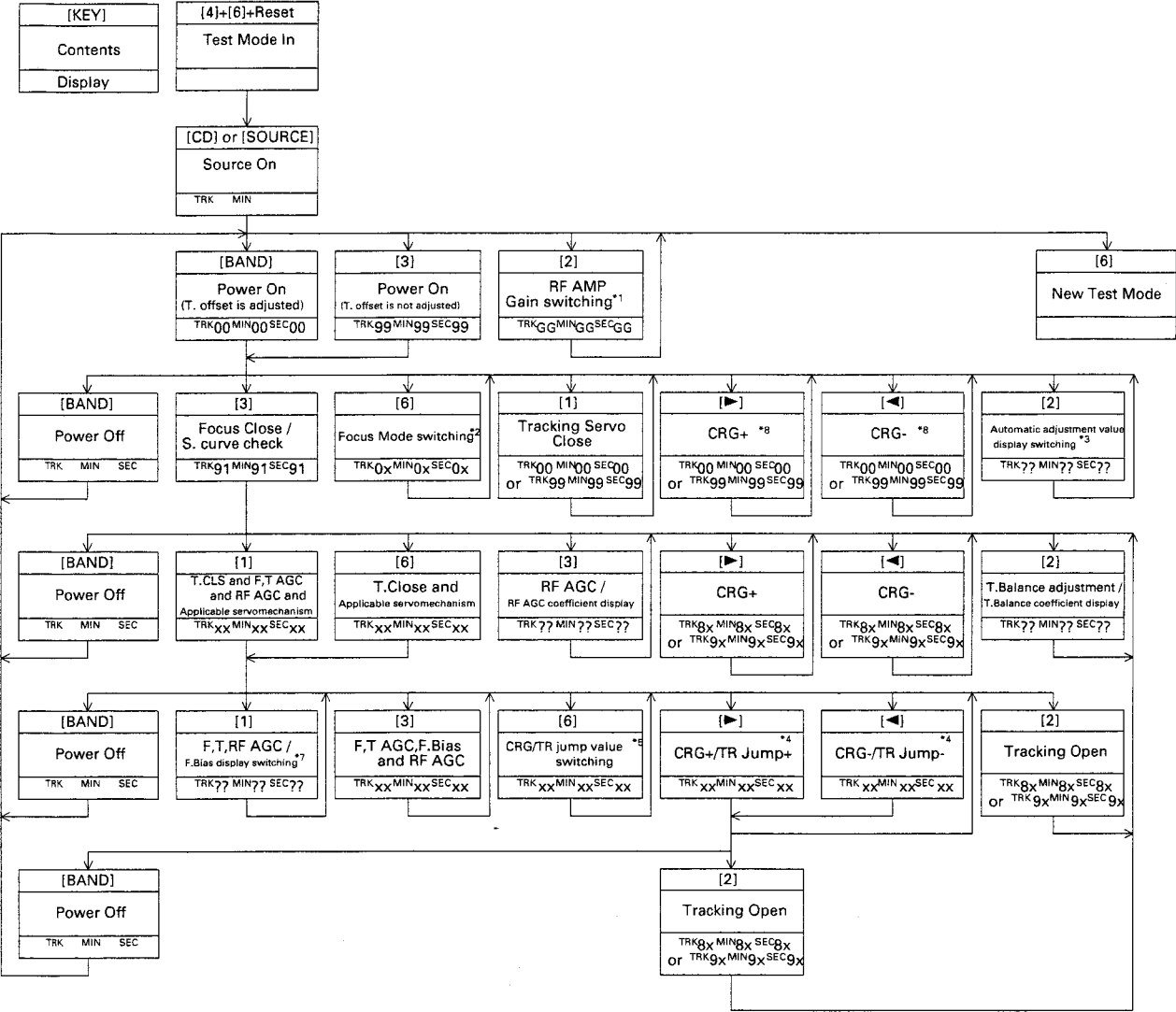
- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to VREF(approx. 2.1V) instead of GND. If VREF and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.
Do not connect the negative probe of the measuring equipment to VREF and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to VREF with the channel 2 negative probe connected to GND.
Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.
If by accident VREF comes in contact with GND, immediately switch the regulator or power OFF.
- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.
- The RFI and RFO signals are easy to oscillate because of a wide band. When observing them, insert a resistor of about 1 k Ω to the series.
- This equipment will not guarantee the load ejection operation when the mechanical unit is turned upside down. In particular, if the ejection operation is incorrectly performed and recovery is disabled, the recovery is enabled by resetting a product or turning ACC off to on.

2) Test Mode

This mode is used for adjusting the CD mechanism module of the device.

- Test mode starting procedure
Reset while pressing the **4** and **6** keys together.
- Test mode cancellation
Switch ACC, back-up OFF.
- After pressing the EJECT key, do not press any other key until the disk is completely ejected.
- If the **▶** or **◀** key is pressed while focus search is in progress, immediately turn the power off (otherwise the actuator may be damaged due to adhesion of the lenses).
- Jump operation of TRs other than 100TR continues after releasing the key. CRG move and 100TR jump operations are brought into the "Tracking close" status when the key is released.
- Powering Off/On resets the jump mode to "Single TR(91)", the RF AMP gain setting to 0 dB, and the automatic adjustment value to the initial value.

● Flow Chart



- *1) TYP
TRK MIN SEC → TRK12 MIN12 SEC12
↑
+12dB
- *2) Focus Close setting
TRK00 MIN00 SEC00 → S. curve check setting
TRK01 MIN01 SEC01 → F. EQ measurement setting
TRK02 MIN02 SEC02
or TRK99 MIN99 SEC99
- *3) F.Offset Display → T.Offset Display → Switch to the order of the original display
- *4) 1TR/32TR/100TR
- *5) Single TR
TRK91 MIN91 SEC91 → 32TR
TRK92 MIN92 SEC92 → 100TR
TRK93 MIN93 SEC93 → CRG Move
TRK94 MIN94 SEC94
or TRK81 MIN81 SEC81 or TRK82 MIN82 SEC82 or TRK83 MIN83 SEC83 or TRK84 MIN84 SEC84
- *6) Only at the time of CRG move or 100TR jump
- *7) TRK/MIN/SEC → F.AGC Gain → T.AGC Gain → F.Bias → RF AGC Gain
- *8) CRG motor voltage = 2 [V]

[Key]	Operation	
	Test Mode	New Test Mode
[BAND]	Power On/Off	Error occurrence time/cause display switching
[▶]	CRG +/TR Jump+ (Direction of the external surface)	TRK+/FF
[◀]	CRG -/TR Jump- (Direction of the internal surface)	TRK-/REV
[1]	T.CLS and AGC and Applicable servomechanism/AGC, AGC display switching	SCAN
[2]	RF Gain switching/Offset adjustment display/T.Balance adjustment/T.OPN	MODE
[3]	F.CLS, S.Curve/Rough Servo and RF AGC, F.T, RF AGC	(ITP)
-	SPDL 1X/2X switching (Double-speed compatibility only)	-
-	Error rate measurement	-
[6]	F.Mode switching/T.CLS/CRG, TR Jump switching	Auto/Manual switching

6.3 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT



• Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• Purpose :

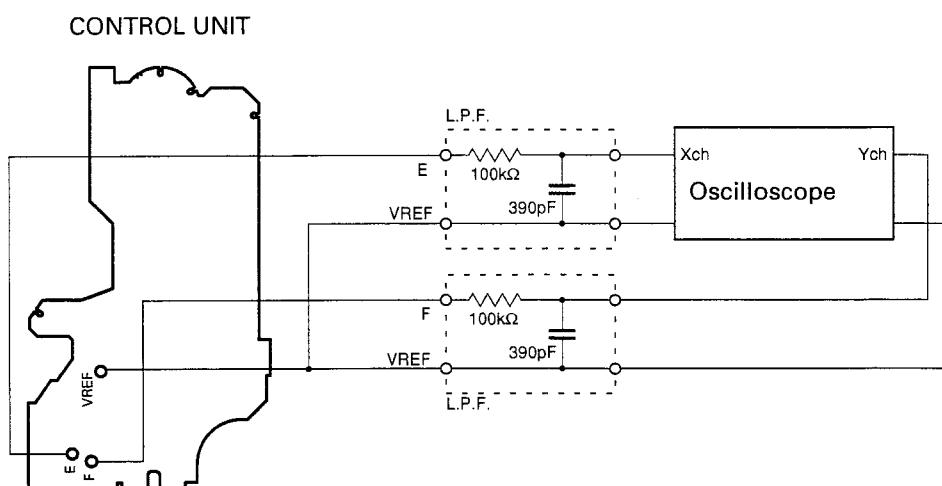
To check that the grating is within an acceptable range when the PU unit is changed.

• Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• Method :

- | | |
|-----------------------|----------------------------|
| • Measuring Equipment | • Oscilloscope, Two L.P.F. |
| • Measuring Points | • E, F, VREF |
| • Disc | • ABEX TCD-784 |
| • Mode | • TEST MODE |



• Checking Procedure

1. In test mode, load the disc and switch the 5V regulator on.
2. Using the ► and ◀ buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75°. Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

• Note

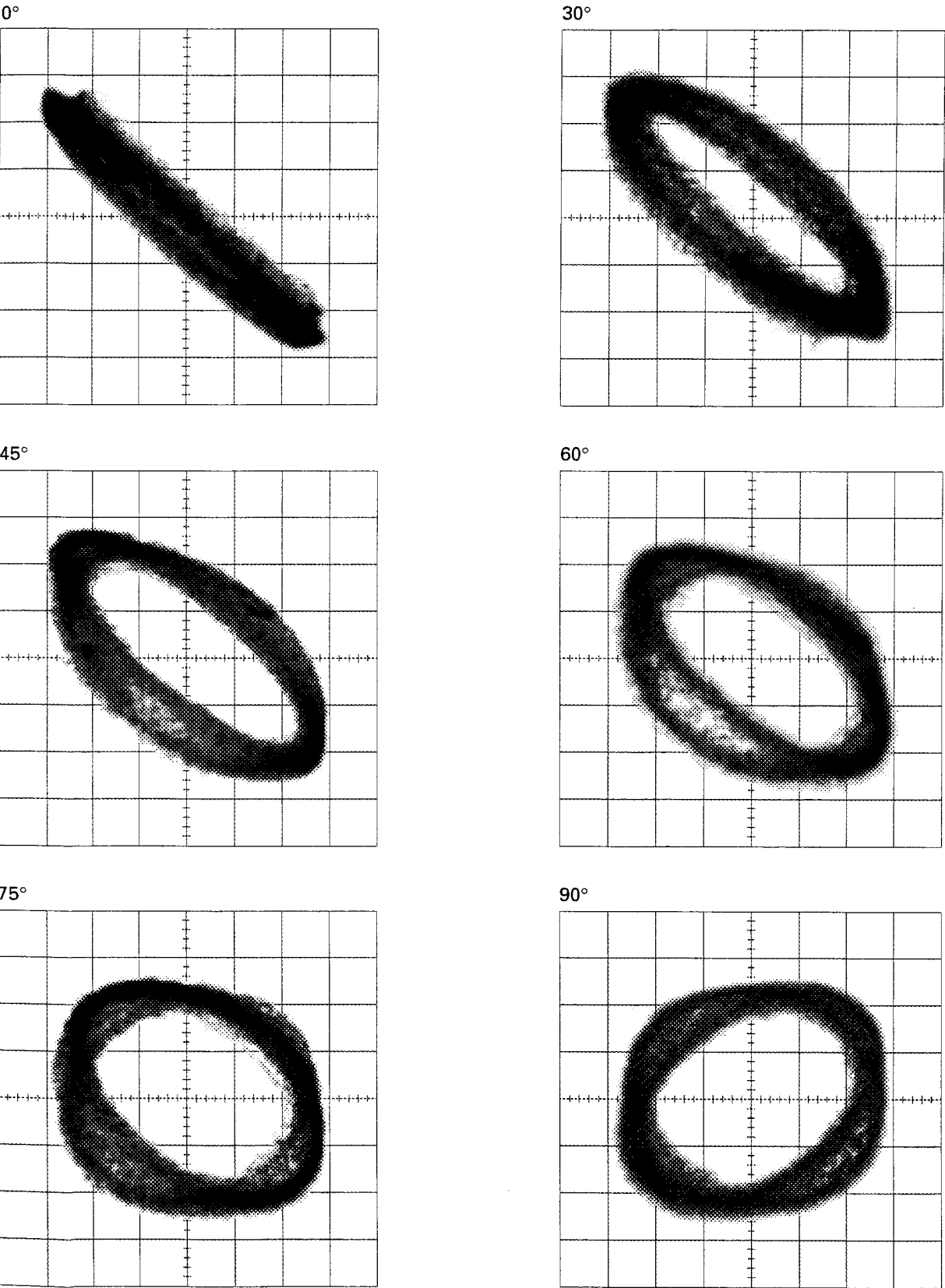
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• Hint

Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC



6.4 CD TEST MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display

ERROR-xx

6-digit display

ERR-xx

4-digit display

E-xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Com- munication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

● New Test Mode

S-CD plays the same way as before.

If an error such as off focus, spindle unlocking, unreadable sub-code, or sound skipping occurs after setup, its cause and time occurred (in absolute time) are displayed.

During setup, operational status of the control software is displayed.

These displays and functions are prepared for enhancing aging in the servicing and efficiency of trouble analysis.

(1) Shifting to the New Test Mode

- ① Turn on the current test mode by starting the reset from the key.
- ② Select S-CD for the source through the specified procedure including use of the [SOURCE] key, and inserting the disc. Then, press the [Jump Mode Selector] key while maintaining the regulator turned off.
- ③ After the above operations, the new test mode remains on irrespective of whether the S-CD is turned on or off.
You can reset the new test mode by turning on the reset start.

(2) Key Correspondence

Key	Test mode		New test mode	
	Regulator Off	Regulator On	In-play	Error Production
BAND	To regulator on	To regulator off	—	Time/Err.No. switching
▶	—	FWD-Kick	FF/TR+	—
◀	—	REV-Kick	REV/TR-	—
1	—	Tracking Close	Scan	—
2	—	Tracking Open	Mode	—
3	—	Focus Close	—	—
—	—	Focus Open	—	—
—	—	Jump Off	—	—
6	To new test mode	Jump mode switching	Auto/Manu	—

Note: Eject and CD on/off is performed in the same procedure as that for the normal mode.

(3) Cause of Error and Error Code

Code	Class	Contents	Description and cause
40	Electricity	Off focus detected.	FOK goes low. → Damages/stains on disc, vibrations or failure on servo.
41	Electricity	Spindle unlocked.	LOCK = Low continued for 150 msec. → Damages/stains on disc, vibrations or failure on servo.
42	Electricity	Sub-code unreadable.	Sub-code was unreadable for 500 msec. → Damages/stains on disc, vibrations or failure on servo.
43	Electricity	Sound skipping detected.	Last address memory function was activated. → Damages/stains on disc, vibrations or failure on servo.

Note: Mechanical errors during aging are not displayed.

(4) Display of Operational Status during Setup

Status No.	Contents	Protective action
21	Focus search start	Focus search timeout.
22	Focus search 2	Focus search timeout.
23	Focus search 3	Focus search timeout.
24	Focus search 4	Focus search timeout.
25	Focus search(Setup protection)	Focus slips off.
26	Focus search(Fast recovery)	Focus slips off.
27	RF detection	Focus slips off.
28	Spindle rough servocontrol	Focus slips off.
29	Tracking balance adjustment start	Focus slips off.
30	Tracking balance adjustment 2	Focus slips off.
31	Tracking balance adjustment 3	Focus slips off.
32	Tracking close start(Spindle stationary servocontrol setting)	Focus slips off.
33	Tracking close 2	Focus slips off.
34	Tracking close 3	Focus slips off.
35	Focus/Tracking AGC start	Focus slips off.
36	Focus/Tracking AGC 2	Focus slips off.
37	Focus/Tracking AGC 3	Focus slips off.
38	Focus/Tracking AGC 4	Focus slips off.
39	Focus/Tracking AGC 5	Focus slips off.
40	Focus/Tracking AGC 6	Focus slips off.
41	Focus/Tracking AGC 7	Focus slips off.
42	Focus/Tracking AGC 8	Focus slips off.
43	FE bias start	Focus slips off.
44	FE bias 2	Focus slips off.
45	RF AGC start	Focus slips off.
46	RF AGC 2	Focus slips off.
47	Lock check start	Focus slips off.
48	Lock is being checked	Focus slips off.
49	Subcode check start	Focus slips off, spindle lock is not performed.
50	Subcode is being checked	Focus slips off, no subcode can be read.

(5) Display Examples

1) During Setup

8-digit display, 6-digit display	4-digit display(Auto setting)	4-digit display(Manual setting)
TNO. Min Sec	TNO.	Min Sec
11 11' 11"	11	11' 11"

2) During Operation (TOC read, TRK search, Play, FF and REV)

The same as in the normal mode.

3) When a Protection Error Occurred

(A) Error display ((A)←→(B), (C) : BAND key)

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx

(B) Error occurrence timing display in track no. ((B)←→(C) : Auto/Manual key)

8-digit display, 6-digit display	4-digit display(Auto setting)
TNO. Min Sec	TNO.
10 40' 05"	10

(C) Error occurrence timing display in absolute time. ((B)←→(C) : Auto/Manual key)

8-digit display, 6-digit display	4-digit display(Manual setting)
TNO. Min Sec	Min Sec
10 40' 05"	40' 05"

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the Grille Panel Assy (Fig.1)

- ➡ 1 Remove the two screws and then remove the Grille Panel Assy.

● Removing the CD Mechanism Module (Fig.1)

- ➡ 2 Remove the four screws and then remove the CD Mechanism Module.

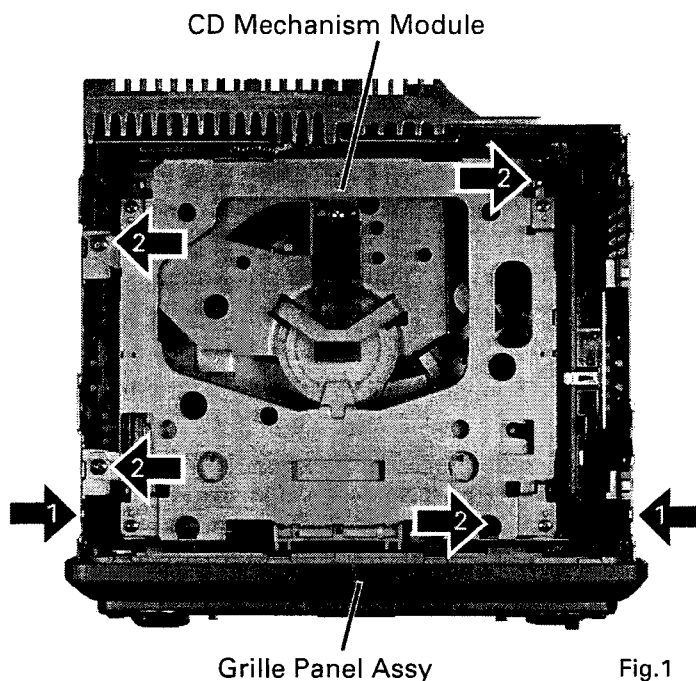


Fig.1

● Removing the Tuner Amp Unit (Fig.2)

- ➡ 1 Remove the two screws.
- ➡ 2 Remove the three screws.
- ➡ 3 Straight the tabs at three locations indicated.
- ➡ 4 Remove the screw and then remove the Tuner Amp Unit.

*) Tuner Amp Unit is different partially from this photo.

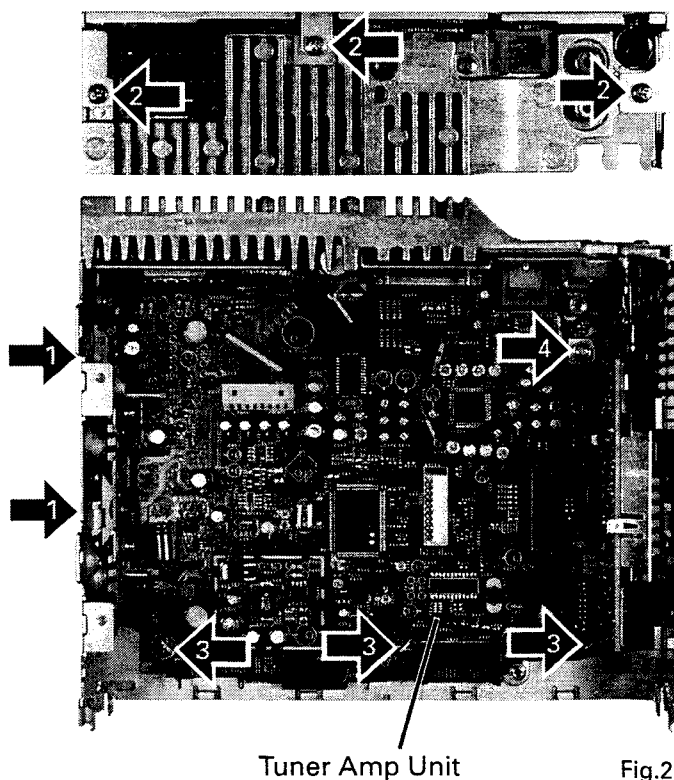


Fig.2

● Removing the OEL Unit

1. Apply hot air to the cable pins for the anode terminal using a blower used for removing a flat-packaged IC or something like that. When all the pins are peeling off from the PCB, pinch the cable with a pair of tweezers and remove it slowly from the PCB. (Fig.3)

* Be careful not to remove other electrical parts when you use a blower. Especially, when hot air is appropriated to the VR1902 too much, the volume will destroy.

* Flexible cable may not remove easily by transforming the Bosses by the hot air of the Blower.

2. Five tabs are extended until becoming straight in the direction of the arrow and then remove the Holder. (Fig.3)
3. Slowly set up the OEL Unit. At this time, the stress is prevented from hanging to flexible cable in the Cathode terminal. (Fig.4)
4. The Cathode terminal is removed according to the procedure same as the Anode terminal, and the OEL Unit is removed. (Fig.4)
5. Remove the Holder. (Remove after removing the Cathode terminal without fail.) (Fig.4)

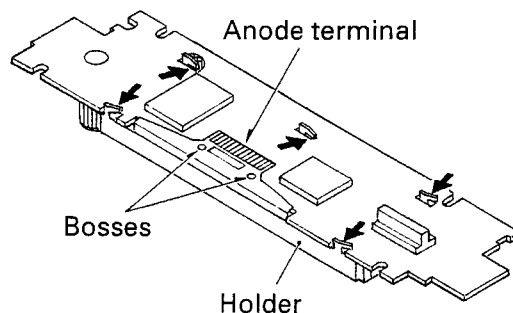


Fig.3

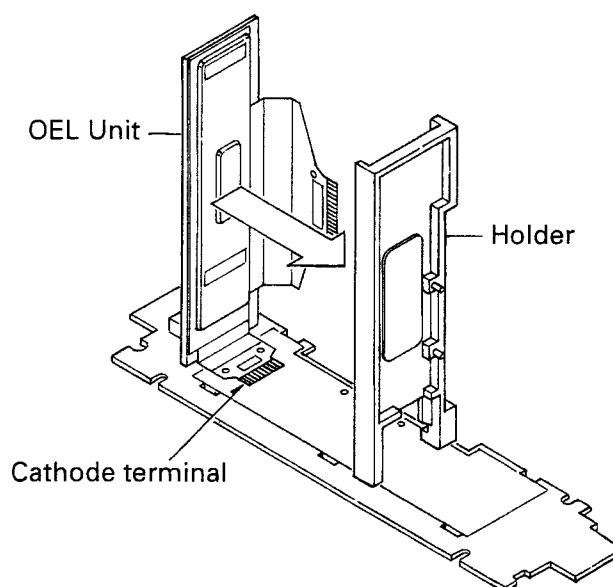


Fig.4

● Installing the OEL Unit

1. Install the Holder in the OEL Unit. (Fig.5)
2. When soldering the flexible cable for the Cathode terminal on the PCB, use a pair of tweezers. First, insert the tips of tweezers into 2 holes in the flexible cable, then into the 2 holes in the PCB. (Fig.5)
3. Position the flexible cable on the PCB so that their lands touch each other. (Fig.5)
4. Apply solder to each pin of the flexible cable. (Fig.5)

* Appropriate soldering iron lightly so that the stress should not hang to Flexible cable.

5. Lay down the OEL Unit. (Fig.5)
6. Install the Holder. (Fig.3)
7. When soldering the flexible cable for the Anode terminal on the PCB, first, insert the Bosses on the PCB into the 2 holes in the flexible cable. Then, take the same procedures 2 and 3 as that for the Cathode terminal to solder the cable pins. (Fig.3)

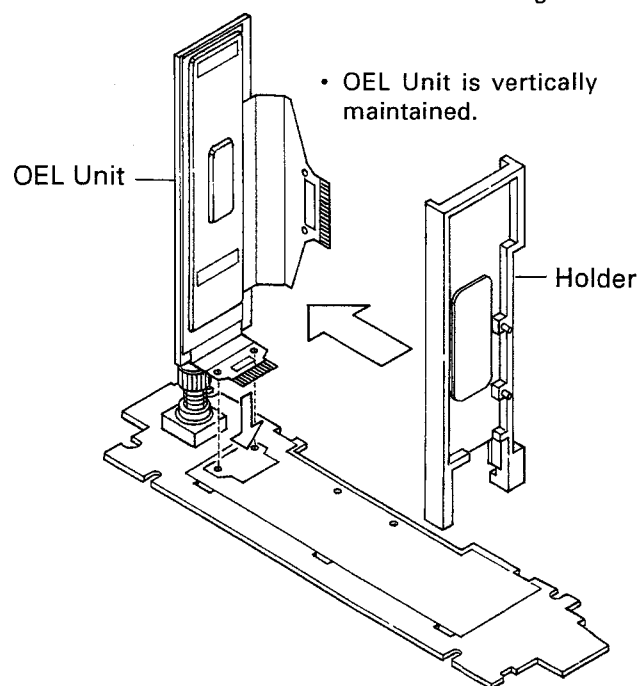
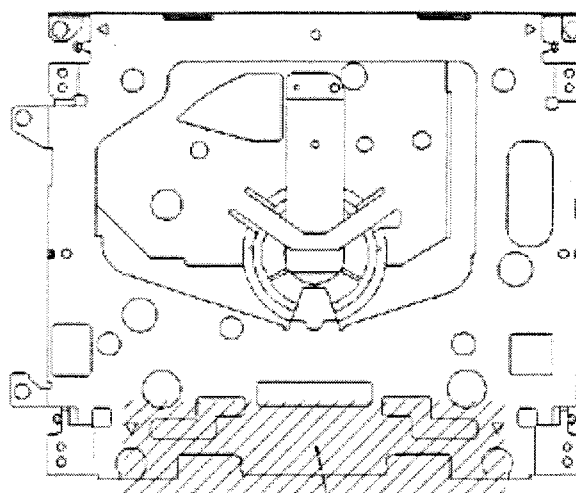


Fig.5

● How to hold the Mechanical Unit

1. Hold the top and bottom frame.
2. Do not squeeze top frame's front portion too tight, because it is fragile.



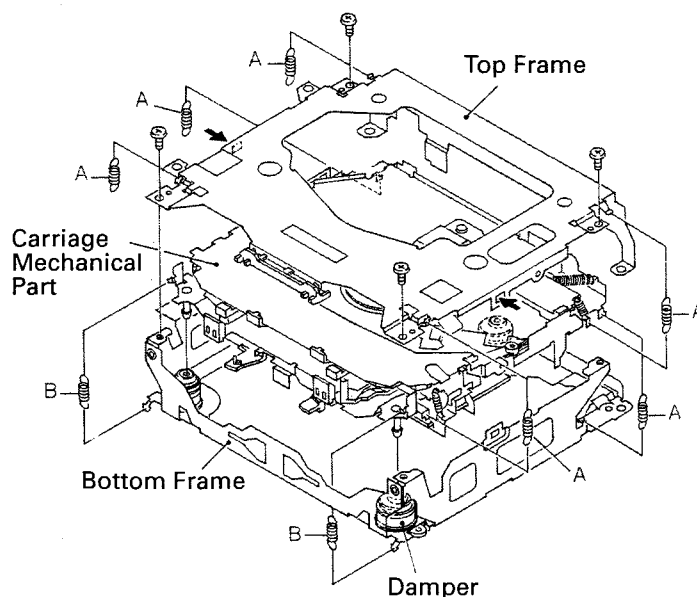
Do not squeeze.

● How to remove the Top and Bottom Frame

1. When the disk is in "clamp" state, unlock Spring A (6 pieces) and Spring B (2 pieces), and unscrew screws (4 pieces).
2. Unlock each 1 of pawl at the both side of the frame, then remove the top frame.
3. Remove the Carriage Mechanical part in such way that; you remove the mechanical part from 3 pieces of Damper while slowly pulling up the part.
4. Now, the top frame has been removed, and under this state, fix the genuine Connector again, and eject the disk.

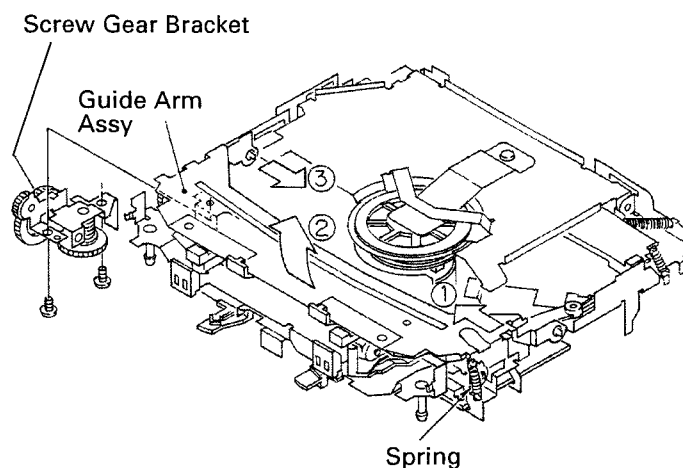
(Caution)

When you reassemble the Carriage Mechanical part, apply a bit of alcohol to Dampers.



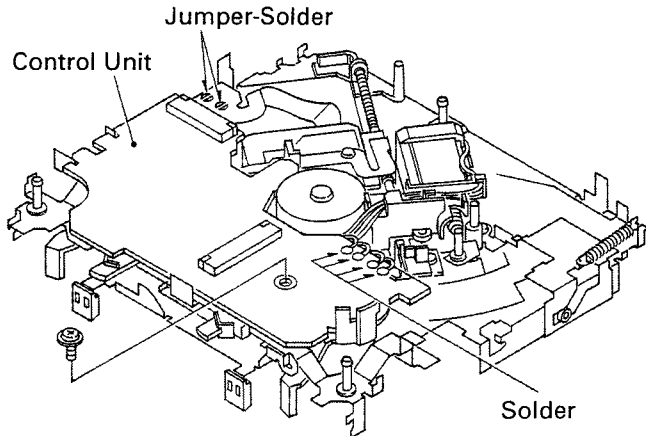
● How to remove the Guide Arm Assy

1. Unlock the spring (1 piece) at the right side of the assembly.
2. Unscrew screws (2 pieces), then remove the Screw Gear Bracket.
3. Shift the Guide Arm Assy to the left and slowly rotate it to the upper direction.
4. When the Guide Arm Assy rotates approximately 45 degree, shift the Assy to the right side direction and remove it.



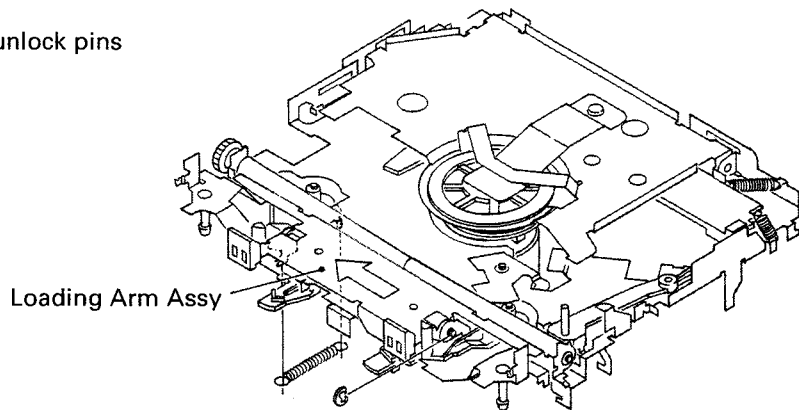
● How to remove the Control Unit

1. Give jumper-solder treatment to the Flexible Wire of the Pickup unit, then remove the wire from the Connector.
2. Remove all 4 points of solder-treatment on the Lead Wire. Also, unscrew the screw(1 piece).
3. Then, Remove the Control unit.
(Caution)
Be careful not to damage SW when you reassemble the Control Unit into the device.



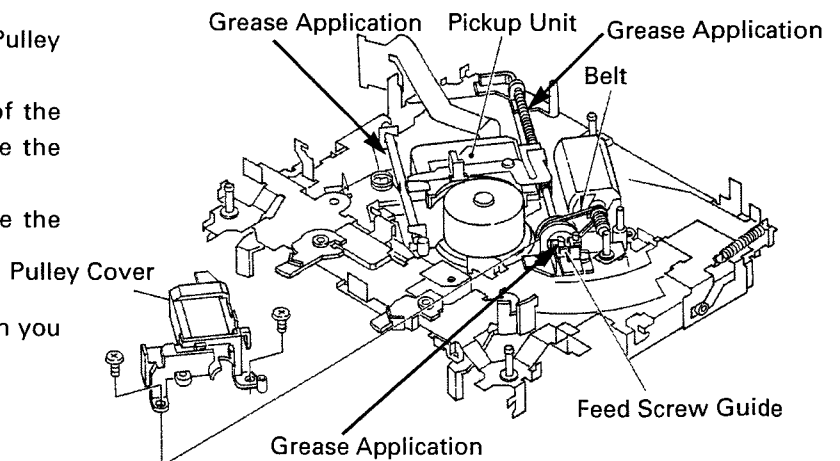
● How to remove the Loading Arm Assy

1. Unlock the spring (1 piece) and remove the E ring (1 piece) of the Fulcrum Shaft.
2. Shift the arm to the left side direction and unlock pins (2 pieces).

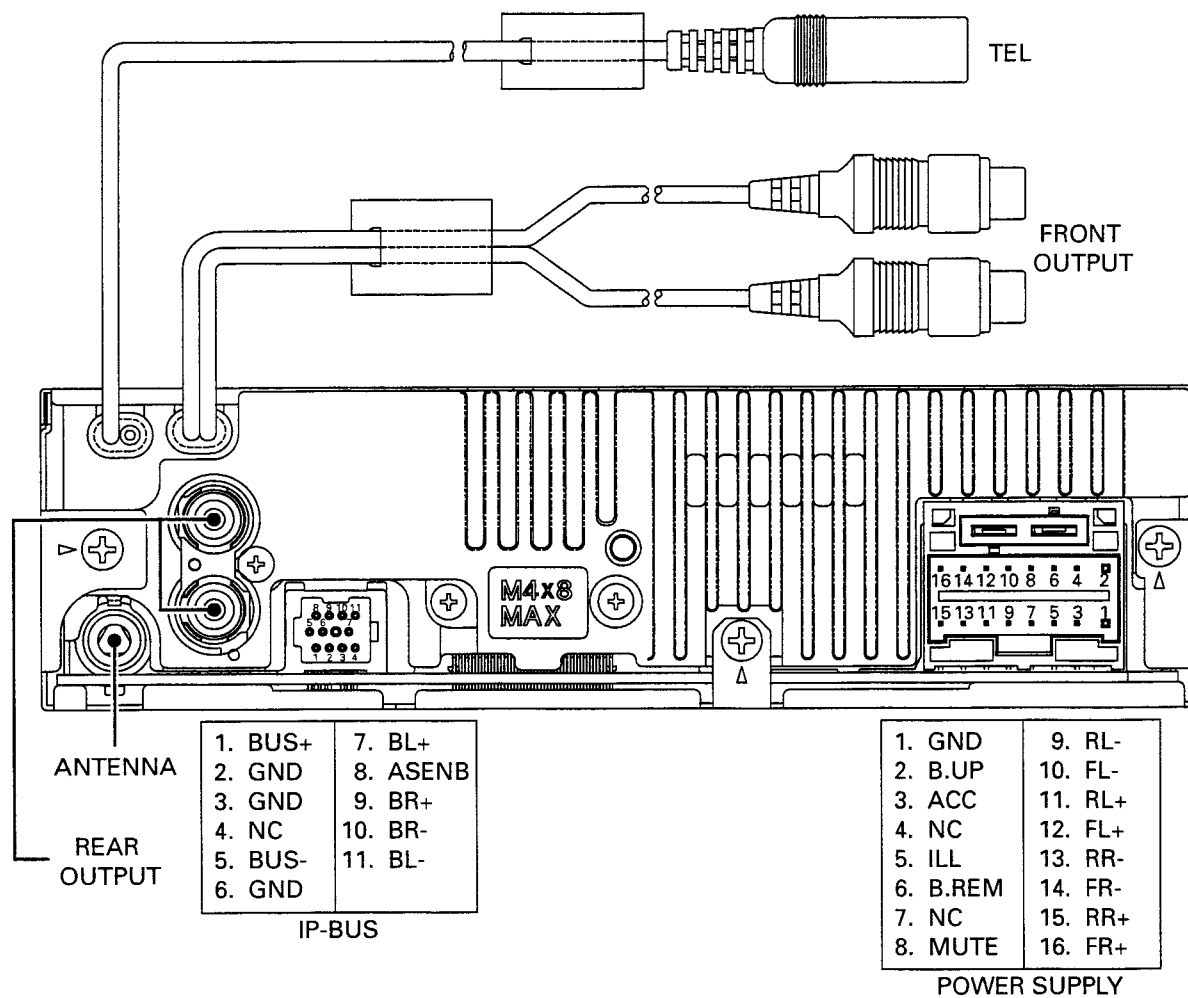


● How to remove the Pickup Unit

1. Unscrew 2 pieces of screws, then remove the Pulley Cover.
2. Remove the Feed Screw unit from the pawl of the Feed Screw Guide (The pawl is located inside the guide).
3. Remove the belt from the Pulley, then remove the Pickup unit.
(Caution)
Make sure not to stain the belt with grease when you fix the belt.



7.1.2 CONNECTOR FUNCTION DESCRIPTION



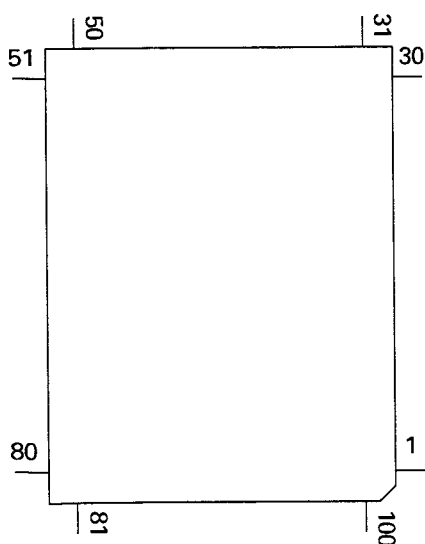
7.2 IC

● Pin Functions (PD5700A)

Pin No.	Pin Name	I/O	Function and Operation
1	TUNPDO	O	TUNER:Data output(PLL)
2	TUNPCK	O	TUNER:Clock output(PLL)
3	EMUTE	O	EVOL:Mute output (Not used)
4	VST	O	EVOL:Strobe output
5	VDT	O	EVOL:Data output
6	NC		Not used
7	VCK	O	EVOL:Clock output
8	BYTE		Vss
9	CNVSS		Vss
10	TELIN	I	TEL:Telephone mute input
11	HTELPW	O	TEL:Microphone control output
12	RESET	I	Reset input(RESET)
13	XOUT		Clock output
14	VSS		Power supply input(Vss)
15	XIN		Clock input
16	VCC		Power supply input(Vcc)
17	NC		Not used(Vcc)(Pull up)
18	RCK	I	RDS:Clock input
19	LDET	I	RDS:PLL lock detection input
20	DALMON	O	DFS alarm output
21	RX2	I	IPBUS:Input 2
22	OELPW	O	OEL power supply output
23	SYSPW	O	System power control output
24	PEE	O	Beep tone output
25	RDS57K	I	RDS:57KHz pulse count input
26	ROMCS	O	External ROM:Chip select output
27	ROMCK	O	External ROM:Clock output
28	ROMDATA	I/O	External ROM:Data input / output
29	RX	I	IPBUS:Data input
30	TX	O	IPBUS:Data output
31-33	NC		Not used
34	VDCONT	O	CD:VD power supply control output
35	DPDT	O	GRILLE:Display data output
36	KYDT	I	GRILLE:Key data input
37, 38	ROT1, 0	I	Rotary encoder pulse input 1, 0
39	PCL	O	Clock adjustment output
40	SWVDD	O	GRILLE:Chip enable output
41	DSSENS	I	Detach sense input
42	FLPILM	O	Inside of flap illumination output
43	ILMPW	O	Illumination output
44	EJTIN	I	EJECT key input
45	DRST	O	RDS:Reset output
46	RDSLK	I	RDS:Lock signal input
47	RDT	I	RDS:Data input
48	AM/FM	O	TUNER:Decoder power supply control output
49	ST	I	TUNER:Stereo input
50	SD	I	TUNER:SD input
51	NL2DT	I	RDS:Noise level 2 input
52	TMUTE	O	RDS:Mute output
53	SDBW	I	RDS:In case of NF, SD input
54-57	NC		Not used
58	CONT	O	CD:Servo driver control output
59-61	XPIO3-1	I/O	CD:LSI data input/output 3-1
62	VCC		Power supply input(Vcc)
63	XPIO0	I/O	CD:LSI data input/output 0
64	VSS		Power supply input(Vss)
65	CDLOEJ	O	CD:Load Motor Load/Eject output

Pin No.	Pin Name	I/O	Function and Operation
66	CLCONT	O	CD:Driver input switch output
67	NC		Not used
68	CD5VON	O	CD:Power supply control output
69	HOME	I	CD:CRG HOME detection input
70	HTELM	O	TEL:Mute output for handsfree (Not used)
71	TUNPCE2	O	TUNER:Chip enable output(EEPROM)
72	TUNPCE	O	TUNER:Chip enable output(PLL)
73	BSENS	I	Backup sense
74	ASENS	I	ACC sense
75	CURRQ	O	RDS:Voltage FIX output
76	LOCH	O	TUNER:Local H output
77	LOCL	O	TUNER:Local L output
78	XPCK	O	CD:LSI clock output
79	XCE	O	CD:LSI chip enable output
80	XRST	O	CD:LSI reset output
81	IPPW	O	IPBUS:Driver power supply control output
82	ASENBO	O	IPBUS:Slave ACC sense output
83	ISENS	I	Illumination sense input
84, 85	MODEL1, 0	I	Model input 1, 0 (Not used)
86	RECIVE	O	During RDS data reception output
87	MUTE	O	Mute output
88	TESTIN	I	Test program input
89	DSCSNS	I	CD:Disc position detection input
90	VDSNS	I	CD:VD power supply sense input
91	TEMP	I	CD:Temperature sense input
92	LVLINR	I	Level indicator R ch input
93	CSENS	I	Flap open/close sense input
94	LVLINL	I	Level indicator L ch input
95	NL1	I	RDS:Noise level input 1
96	AVSS		AD converter power supply input(Vss)
97	SL	I	TUNER:Signal level input
98	VREF		AD converter reference voltage(Vref)
99	AVCC		AD converter power supply input(Vcc)
100	TUNPDI	I	TUNER:Data input

*PD5700A

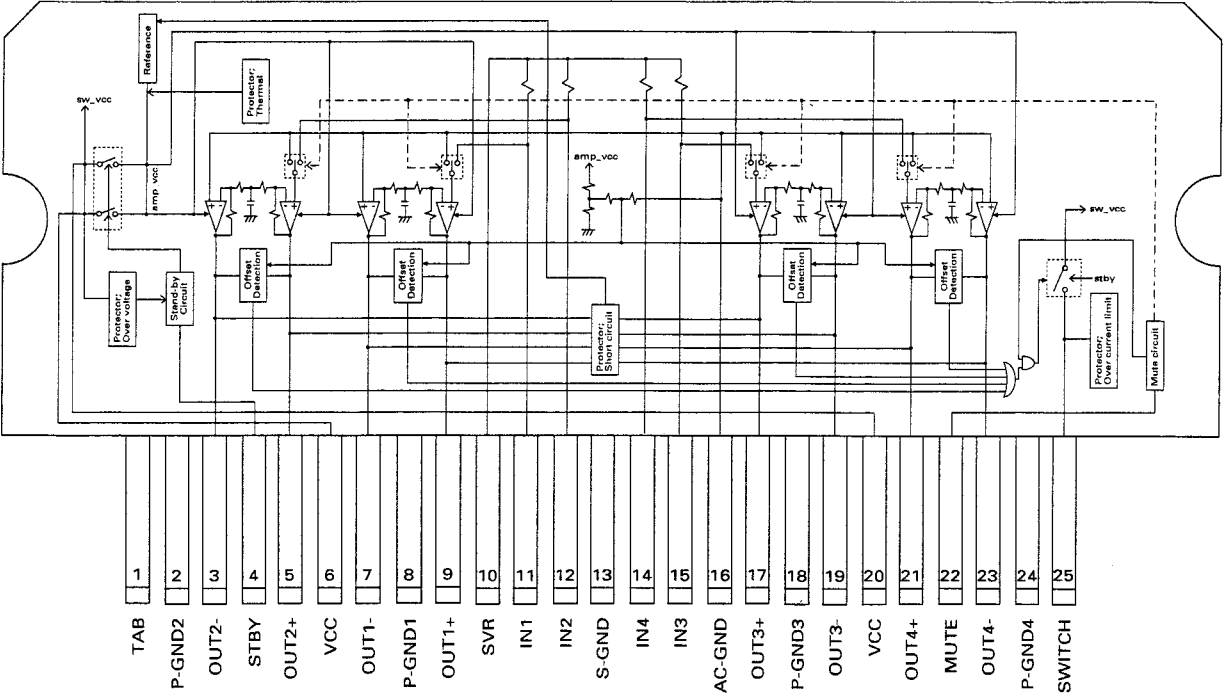


IC's marked by * are MOS type.

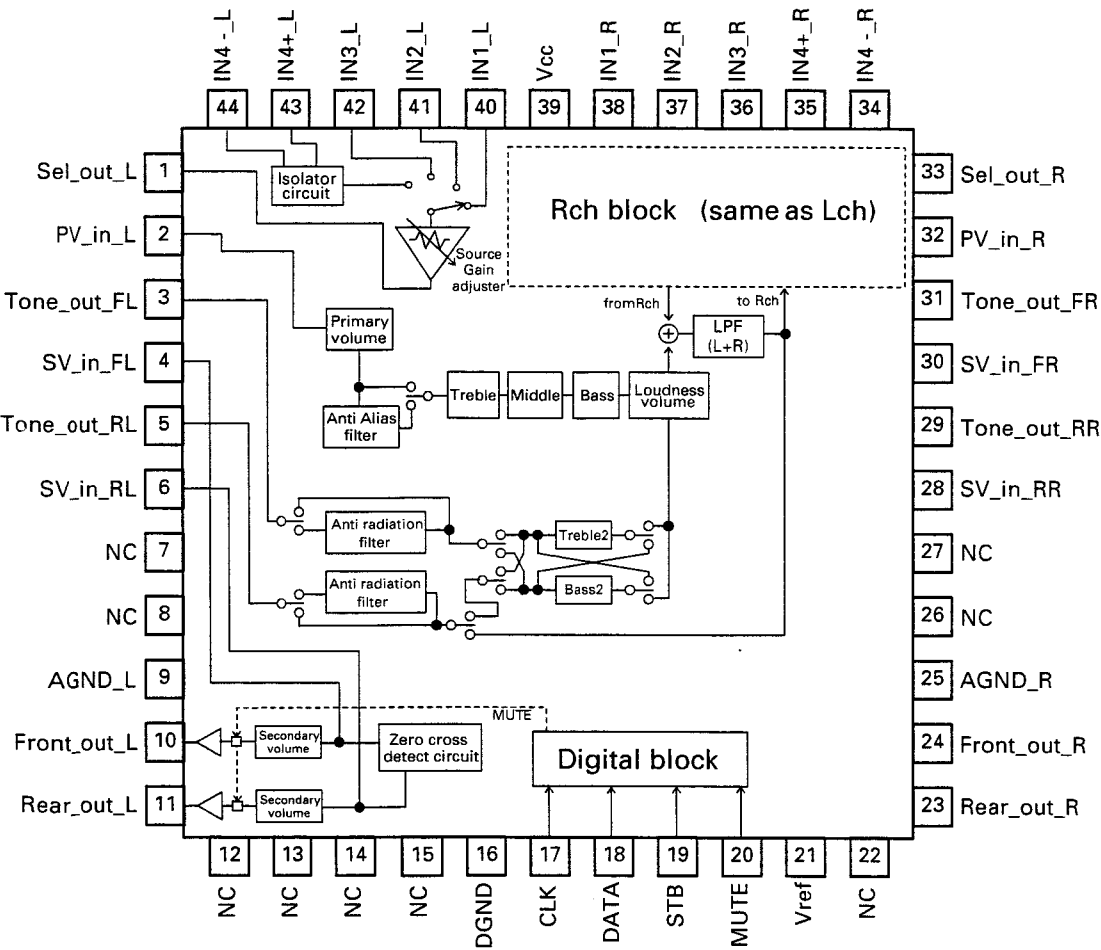
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

DEH-P6400R

PAL007A



PML008A

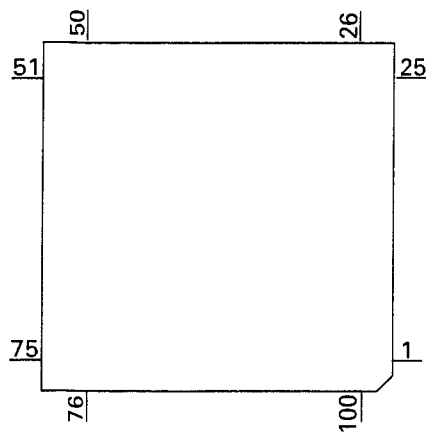


● Pin Functions (PD5706A)

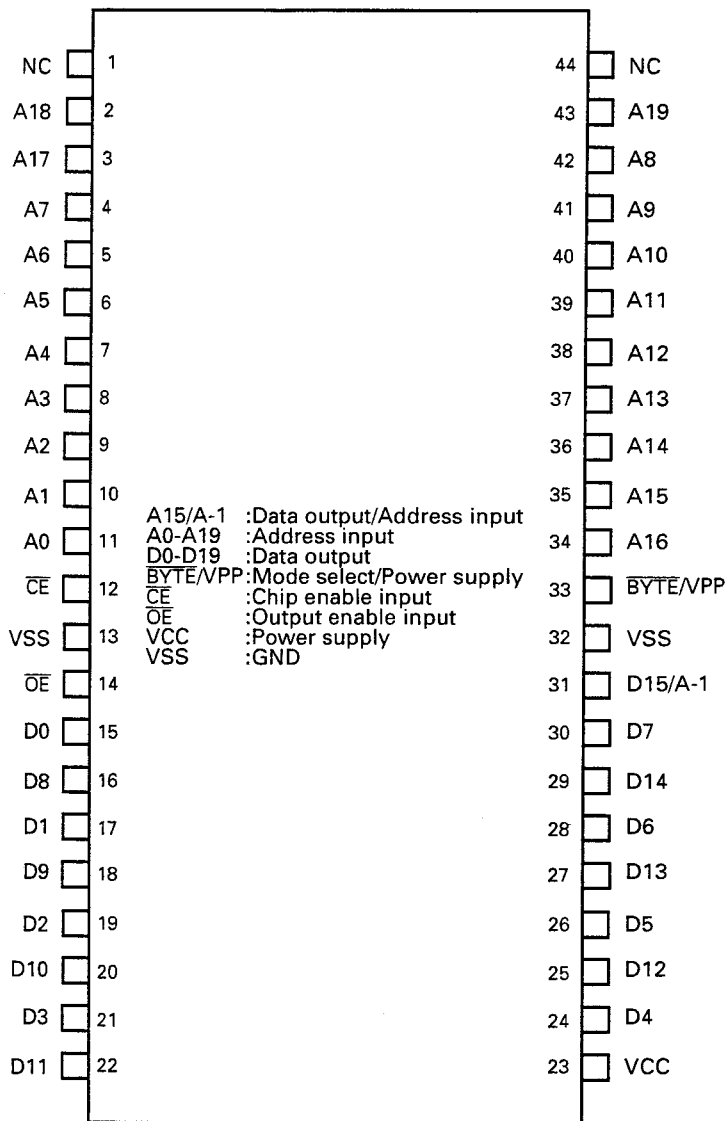
Pin No.	Pin Name	I/O	Function and Operation
1-4	NC		Not used OPEN
5	REM	I	Remote control reception input
6	BYTE	I	GND connection
7	CNVSS	I	GND connection
8, 9	NC		Not used OPEN
10	RESET		Pull up
11	XOUT	O	Crystal oscillating element connection pin
12	VSS		VSS connection
13	XIN	I	Crystal oscillating element connection pin
14	VCC		VCC connection
15	NMI	I	NVI input (Not used)
16-19	KD1-KD2	I	Key data 1-4 input
20	CKC	O	Fixed pulse output for cathode driver
21	NC		Not used
22	CKA	O	Fixed pulse output for anode driver
23	NC		Not used
24	LS	O	Line sink signal output
25	NC		Not used
26	CKD	O	Data transport / driver clock output
27	DPDT	I	Display data input
28	KYDT	O	Key data output
29	DA2	O	Display data MSB output
30	NC		Not used
31	CLK1	I	Clock input for UART1
32	ILMD	O	Dual illumination select output
33	DA1	O	Display data LSB output
34	NC		Not used
35	CLK0	I	Clock input for UART0 input
36	NC		Not used
37	RDY	I	Not used
38	NC		Not used
39	HOLD	I	Not used
40,41	NC		Not used
42	RD	O	Read strobe output
43-46	NC		Not used
47	CS1	O	Bank address select output
48	CS0	O	External ROM chip select output
49	A19	O	Address bus 19 output
50	A18	O	Address bus 18 output (Not used)
51-59	A17-A9	O	Address bus 17-9 output
60	VCC		VCC connection
61	A8	O	Address bus 8 output
62	VSS		GND connection
63-69	A7-A1	O	Address bus 7-1 output
70	A0	O	Address bus 0 output (Not used)
71-86	D15-D0	I/O	Data bus 15-0 input / output
87-92	KS1-KS6	I/O	Key strobe input / output
93	NC		Not used
94	AVSS		GND connection
95	NC		Not used OPEN
96	VREF		Not used VSS connection
97	AVCC		Not used VCC connection
98-100	NC		Not used OPEN

DEH-P6400R

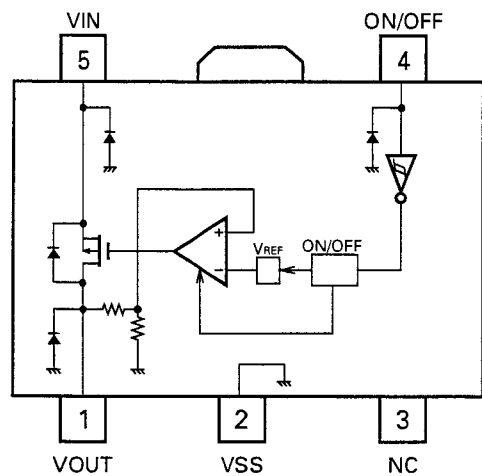
*PD5706A



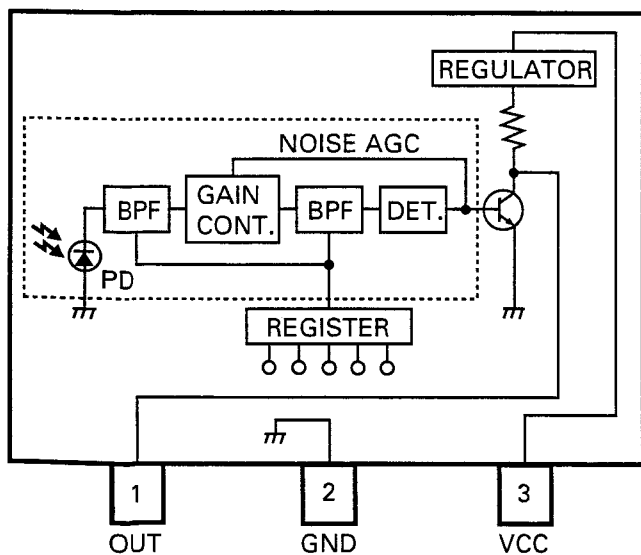
*PD8088A



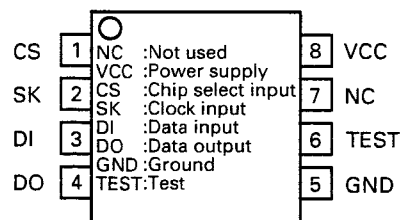
*S-818A33AUC-BGN



*TSOP1840SB3V



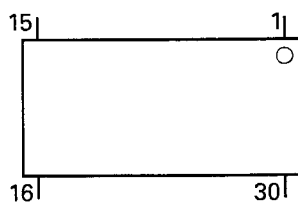
*PDH0045A



● Pin Functions(TA2153FN)

Pin No.	Pin Name	I/O	Function and Operation
1	VCC		Power supply voltage terminal
2	RFGC	I	RF amplitude adjustment control signal terminal
3	GMAD	I	AGC amplifier frequency characteristic adjustment terminal
4	FNI	I	Main beam amplifier input terminal
5	FPI	I	Main beam amplifier input terminal
6	TPI	I	Sub beam amplifier input terminal
7	TNI	I	Sub beam amplifier input terminal
8	MDI	O	Monitor photodiode amplifier input terminal
9	LDO	I	Laser diode amplifier output terminal
10	SEL	I	APC circuit ON/OFF signal, LDO terminal control input terminal and bottom and peak detection frequency switching terminals
11	TEB	I	Tracking error balance adjustment signal input terminal
12	2VRO	O	Reference voltage (2VRO) output terminal
13	TEN	I	Tracking error signal generation amplifier reverse phase input terminal
14	TEO	O	Tracking error signal generation amplifier output terminal
15	SBAD	O	Sub beam addition signal output terminal
16	FEO	O	Focus error signal generation amplifier output terminal
17	FEN	I	Focus error signal generation amplifier reverse phase input terminal
18	SEB	I	RFRP generation circuit mode switching terminal
19	VRO	O	Reference voltage (VREF) output terminal
20	RFRP	O	Signal generation amplifier output terminal for track count
21	BTC	I	Bottom detection time constant adjustment terminal for RFCT signal generation
22	RFCT	O	RFRP signal center level output terminal
23	PKC	I	Peak detection time constant adjustment signal for RFCT signal generation
24	RFRPIN	I	Signal generation amplifier input terminal for track count
25	RFGO	O	RF signal amplitude adjustment amplifier output terminal
26	GVSF	I	AGC, FE or TE amplifier gain switching terminal
27	AGCIN	I	RF signal amplitude adjustment amplifier input terminal
28	RFO	O	RF signal generation amplifier output terminal
29	GND	I	GND terminal
30	RFN2	I	RF signal generation amplifier input terminal

TA2153FN

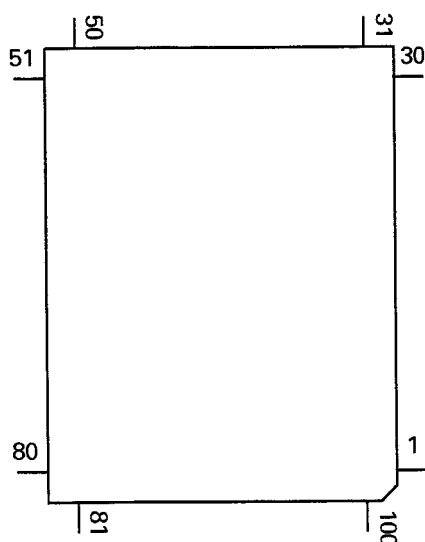


● Pin Functions(TC9495F2)

Pin No.	Pin Name	I/O	Function and Operation
1	TESTO		Test mode terminal
2	H $\overline{\text{SO}}$	O	Replay speed flag output terminal
3	U $\overline{\text{HSO}}$	O	Replay speed flag output terminal
4	EMPH	O	Emphasis flag output terminal for sub code Q data
5	LRCK	O	Channel clock (44.1 kHz) output terminal
6	VSS		Digital ground terminal
7	BCK	O	Bit clock output terminal
8	AOUT	O	Digital audio data output terminal
9	DOUT	O	Digital out output terminal
10	MBOV	O	Buffer memory over signal output terminal
11	IPF	O	Correction flag output terminal
12	SBOK	O	CRCC decision result output for sub code Q data
13	CLCK	I/O	Clock input/output terminal for sub code P-W data read
14	VDD		Digital + power supply terminal (5 V)
15	VSS		Digital ground terminal
16	DATA	O	Sub code P-W data output terminal
17	SFSY	O	Replay-system frame sync signal output terminal
18	SBSY	O	Sub code block sync output terminal
19	SPCK	O	Clock for processor status signal read
20	SPDA	O	Processor status signal output terminal
21	COFS	O	Correction-system frame clock (7.35 kHz) output terminal
22	MONIT	O	LSI internal signal output terminal
23	VDD		Digital + power supply terminal (5 V)
24	TESIO0	I	Test input/output terminal
25	P2VREF		PLL-system only 2VREF terminal
26	HSSW	O	The VREF voltage is reached for double or quad speed.
27	ZDET	O	One-bit DAC zero detection flag output terminal
28	PDO	O	Phase error signal issue between the EFM and PLCK signals
29	TMAXS	O	TMAX detection result output terminal
30	TAMX	O	TMAX detection result output terminal
31	LPFN	I	Reverse input terminal of amplifier for lowpass filter
32	LPFO	O	Output terminal of amplifier for lowpass filter
33	PVREF		PLL-system only VREF terminal
34	VCOREF	I	VCO center frequency reference level terminal
35	VCOF	O	Filter terminal for VCO
36	AVSS		Analog-system ground terminal
37	SLCO	O	Output terminal of DAC for data slice level generation
38	RFI	I	RF signal input terminal
39	AVDD		Analog-system power supply terminal (5 V)
40	RFACT	I	RFRP signal center level input terminal
41	RFZI	I	Input terminal for RFRP signal zero cross
42	RFRP	I	RF ripple signal input terminal
43	FEI	I	Focus error signal input terminal
44	SBAD	I	Sub beam addition signal input terminal
45	TSIN	I	Test input terminal
46	TEI	I	Tracking error input terminal
47	TEZI	I	Input terminal for tracking error or zero cross
48	FOO	O	Focus equalizer output terminal
49	TRO	O	Tracking equalizer output terminal
50	VREF		Analog reference power supply terminal
51	RFGC	O	RF amplitude adjustment control signal output terminal
52	TEBC	O	Tracking balance control signal output terminal
53	FMO	O	Feed equalizer output terminal
54	FVO	O	Speed error signal or feed search EQ output
55	DMO	O	Disc equalizer output terminal
56	2VREF		Analog reference power supply terminal
57	SEL	O	APC circuit ON/OFF signal output terminal

Pin No.	Pin Name	I/O	Function and Operation
58-61	FLGA-D	O	External flag output terminal for internal signal monitor
62	VDD		Digital + power supply terminal (5 V)
63	VSS		Digital ground terminal
64	IO0	O	RF amplifier gain switching terminal
65	IO1	O	Not used
66	IO2	I	HOME detection switch input terminal
67	IO3	O	FocusDrv and signal output terminal
68	DMOUT	I	Field equalizer PWM output terminal for IO0 and IO1 Disc equalizer PWM output terminal for IO2 and IO3
69	CKSE	I	Usually open
70	DACT	I	DAC test mode terminal
71	TESIN	I	Test input terminal
72	TESIO1	I	Test input/output terminal
73	VSS		Digital ground terminal
74	PXI	I	DPS-system clock oscillator circuit input terminal
75	PXO	O	DPS-system clock oscillator circuit output terminal
76	VDD		Digital + power supply terminal (5 V)
77	XVSS		Ground terminal for system clock oscillator circuit
78	XI	I	System clock oscillator circuit input terminal
79	XO	O	System clock oscillator circuit output terminal
80	XVDD		For system clock oscillator circuit + power supply terminal
81	DVSR		R channel D/A converting unit power supply terminal
82	RO	O	R channel data forward rotation output terminal
83	DVDD		D/A converting unit power supply terminal (5 V)
84	DVR		Reference voltage terminal
85	LO	O	L channel forward rotation output terminal
86	DVSL		L channel D/A converting unit power supply terminal
87-89	TEST1-3	I	Test mode terminal
90-93	BUS0-3	I/O	Data input/output terminal for microcomputer interface
94	VDD		Digital + power supply terminal (5 V)
95	VSS		Digital ground terminal
96	BUCK	I	Clock terminal for microcomputer interface
97	CEE	I	Chip enable signal for microcomputer interface
98	TEST4	I	Test mode terminal
99	TSMOD	I	Test mode terminal
100	RST	I	Reset signal input terminal

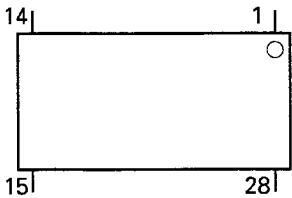
*TC9495F2



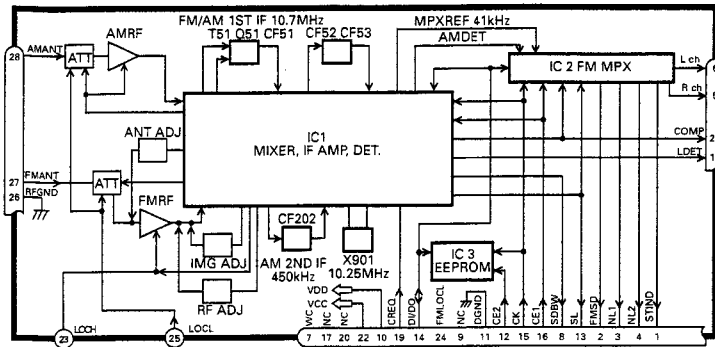
● Pin Functions(BA5996FM)

Pin No.	Pin Name	Function and Operation
1	VR	Input pin for reference voltage
2	OPIN2(+)	Input pin for non-inverting input for CH2 preamplifier
3	OPIN2(-)	Input pin for inverting input for CH2 preamplifier
4	OPOUT2	Output pin for CH2 preamplifier
5	OPIN1(+)	Input pin for non-inverting input for CH1 preamplifier
6	OPIN1(-)	Input pin for inverting input from CH1 preamplifier
7	OPOUT1	Output pin for CH1 preamplifier
8	GND	Ground pin
9	MUTE	Mute control pin
10	POWVCC1	Power supply pin for CH1, CH2, and CH3 at "Power" stage
11	VO1(-)	Driver CH1 - Negative output
12	VO1(+)	Driver CH2 - Positive output
13	VO2(-)	Driver CH2 - Negative output
14	VO2(+)	Driver CH2 - Positive output
15	VO3(+)	Driver CH2 - Positive output
16	VO3(-)	Driver CH2 - Negative output
17	VO4(+)	Driver CH4 - Positive output
18	VO4(-)	Driver CH4 - Negative output
19	POWVCC2	Power supply pin for CH4 at "Power" stage
20	GND	Ground pin
21	CNT	Control pin
22	LDIN	Loading input
23	OPOUTSL	Output pin for preamplifier for thread
24	OPINSL	Input pin for preamplifier for thread
25	OPOUT3	CH3 preamplifier output pin
26	OPIN3(-)	Input pin for inverting input for CH3 preamplifier
27	OPIN3(+)	Input pin for non-inverting input for CH3 preamplifier
28	PREVCC	PreVcc

BA5996FM

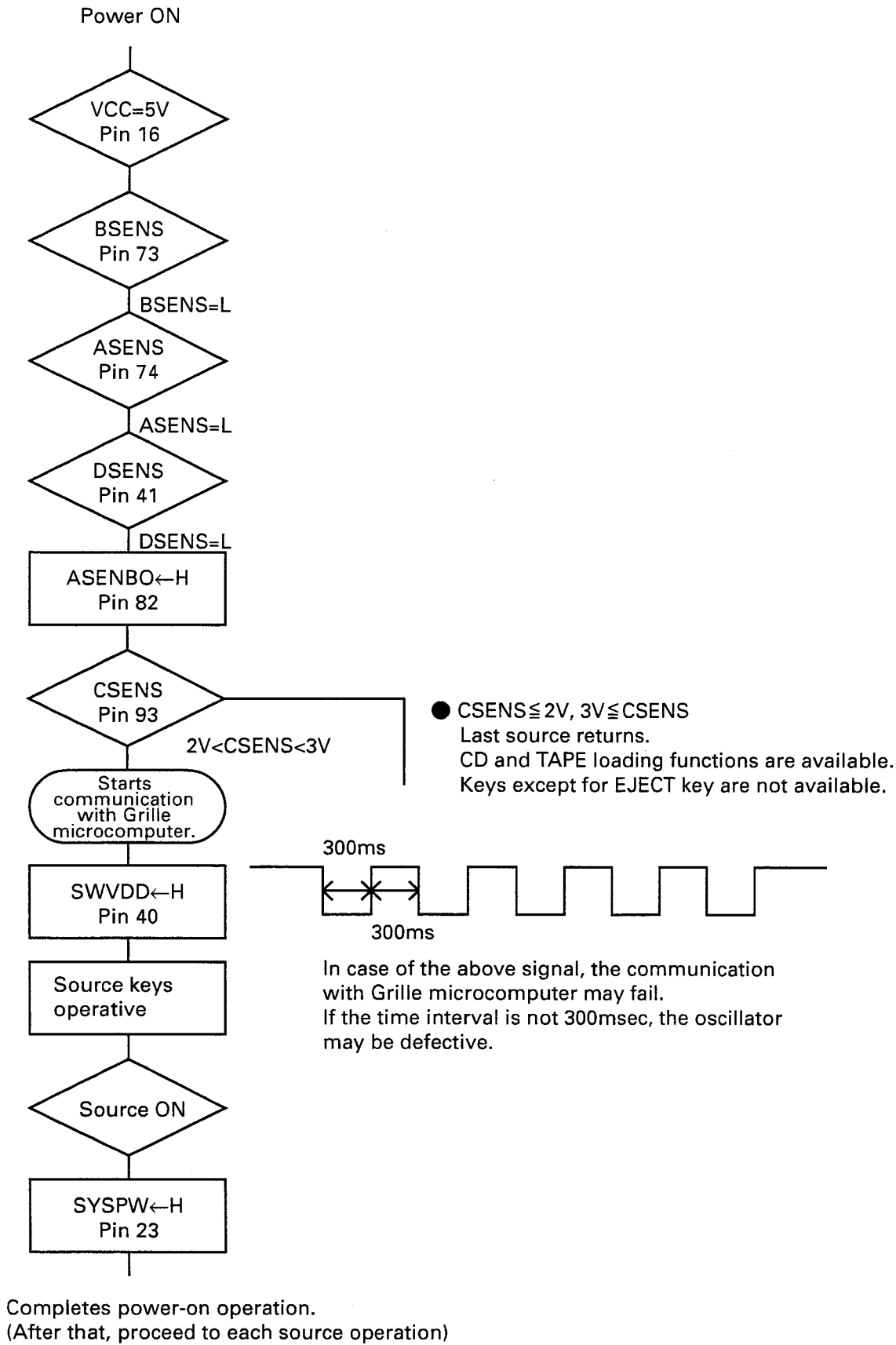


● FM/AM Tuner Unit



No.	Symbol	I/O	Explain	
1	STIND	O	stereo indicator	"Low" when the FM stereo signals are received. To be pulled up to the "VDD" at 47kΩ.
2	FMSD	O	FM station detector	"High" when signals are received. To be pulled up to the "VDD" at 47kΩ. Meanwhile, 10kΩ should be used when taking diver FIX trigger from here and "High: 0.9VDD or more" and "Low: 250mV or less". (Should satisfy the diver IC specifications)
3	NL1	O	noise level-1	"High" when noise is received. Output for the RDS. GND at 47kΩ //1,800pF.
4	NL2	O	noise level-2	"High" when noise is received. Output for the RDS. GND at 36kΩ //330pF.
5	Rch	O	R channel output	FM stereo "R-ch" signal output or AM audio output. Add the specified de-emphasis constant.
6	Lch	O	L channel output	FM stereo "L-ch" signal output or AM audio output. Add the specified de-emphasis constant.
7	WC		write control	EEPROM write control. Writing permissible at "Low". Normally open.
8	SDBW	O	SD bandwidth	SD bandwidth signal output. For detection of detuning data for the RDS.
9	NC			Not used
10	VDD		power supply	Power supply pin for the digital section. DC 5V +/- 0.25V. Be careful about overlapping noise in the logic section.
11	DGND		digital ground	Grounding for the digital section.
12	CE2	I	chip enable-2	EEPROM chip enable. Active a "Low". To be pulled up to the "VDD" at 47kΩ
13	SL	I/O	signal level	Received FM/AM signal level (strength) output. Connect the specified load resistor and capacitor (10k Ω + 39k Ω //4,700pF)
14	DI/DO	I/O	data input/ data output	Data input/Data output. To be pulled up to the "VDD" at 47kΩ
15	CK	I	clock	Clock input. To be pulled up to the "VDD" at 47kΩ
16	CE1	I	chip enable-1	AF-RF chip enable. Active at "High". To be grounded at 47kΩ
17	NC			Not used
18	LDET	O	lock detector	Active at "Low". To be pulled up to the "VDD" at 47kΩ
19	CREQ	I	current request	Active at "Low". To be grounded at 47kΩ
20	NC			Not used
21	COMP	O	composite signal	FM composite signal output. r out < 100Ω
22	VCC		power supply	Analog section power supply pin. DC 8.4V +/- 0.3V
23	LOCH	I	local high	FM local high pin. When seeking local high, apply 5V together with "LOCL".
24	FMLOCL	I	FM local low	FM local low pin. When seeking local low, apply 5V to the base of the NPN transistor with which the specified resistor is being connected to the emitter. Keep it open in case of ordinary marketed models.
25	LOCL	I	local low	FM/AM local low pin. When seeking local low, apply 5V to the base of the NPN transistor. Since this pin is exclusive for AM when the FMLOCL is in use, do not drive it under FM.
26	RFGND		RF ground	Grounding for the antenna section.
27	FMANT	I	FM antenna input	FM antenna input. 75Ω. Surge absorber (DSP-201M-S00B) is necessary.
28	AMANT	I	AM antenna input	AM antenna input. High impedance. Connect to the antenna through an L (LAU type) of 4.7μH. To cope with the power transmission line hums, insert a series circuit consisting of an L (a coil of about 100mH) + R (a resistor of 470 Ω to 2.2kΩ) between the GND.

7.3 OPERATIONAL FLOW CHART



7.4 CLEANING

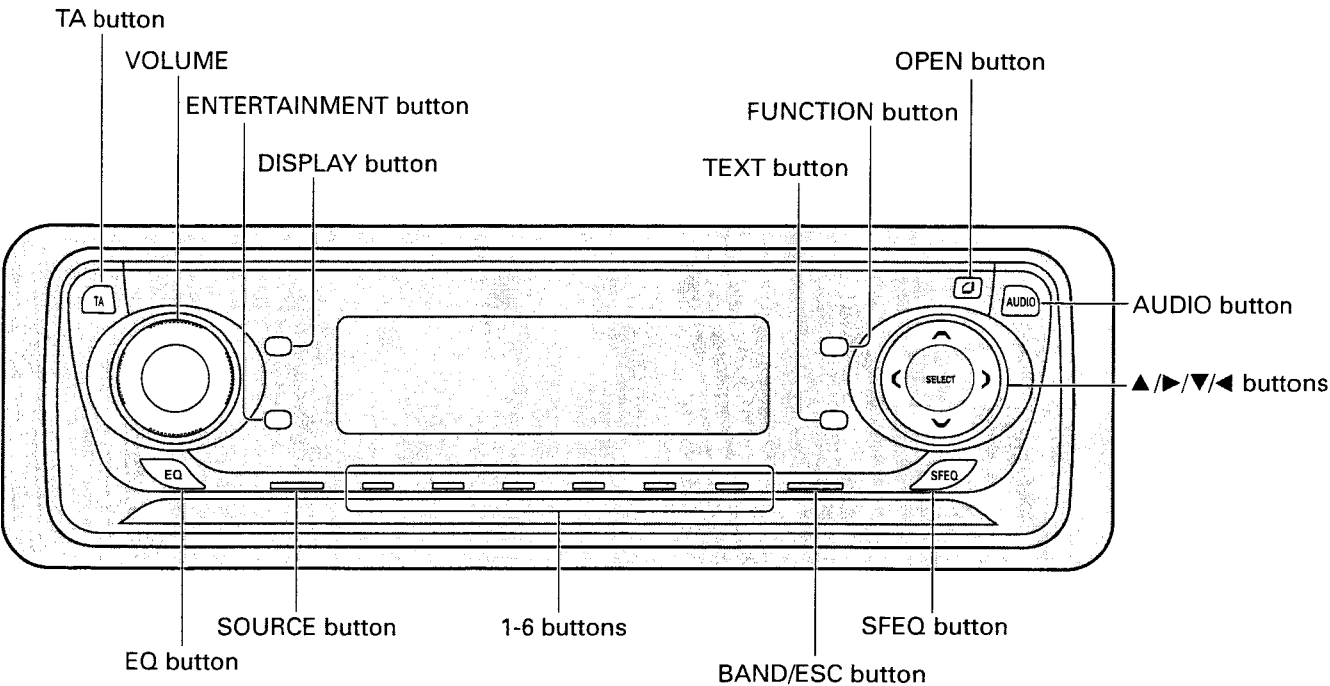
Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

8. OPERATIONS AND SPECIFICATIONS

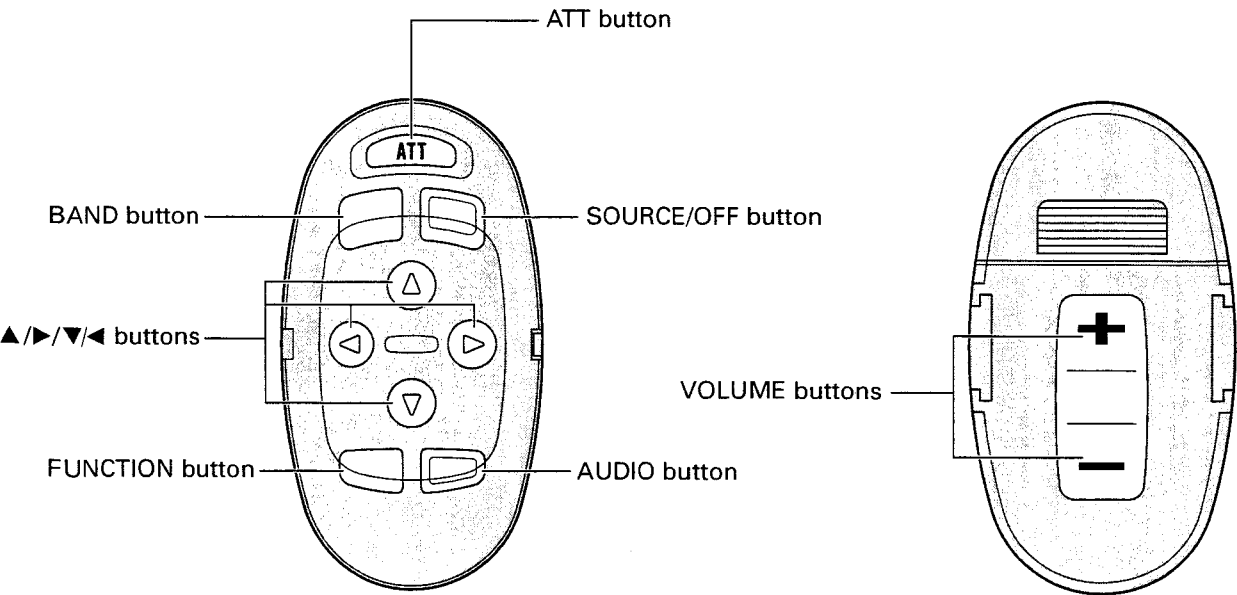
8.1 OPERATIONS

HEAD UNIT



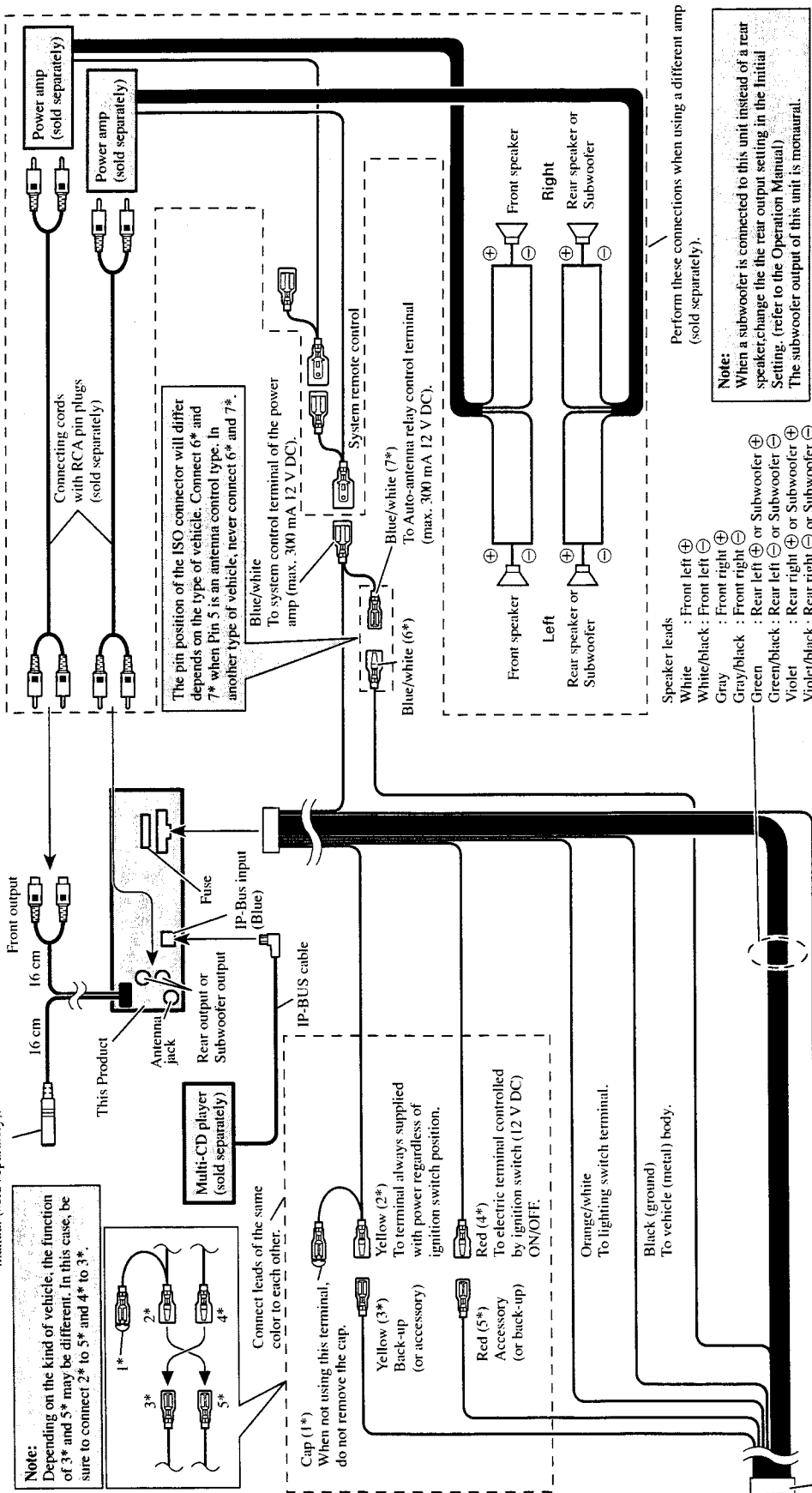
STEERING REMOTE CONTROL UNIT (CD-SR80)

The steering remote control CD-SR80 is sold separately. Operation is the same as when using the button on the head unit.



● CONNECTION DIAGRAM

TEL terminal
Refer to a Hand
manual (sold se



If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.

Note:
In some vehicles, the ISO connector may be divided into two. In this case, be sure to connect to both connectors.

8.2 SPECIFICATIONS

General

Power source	14.4 V DC (10.8 – 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	5 mA or less
Dimensions (W x H x D):	
Chassis (DIN)	178 x 50 x 157 mm
Nose	188 x 58 x 19 mm
Weight	1.4 kg

Audio

Maximum power output	50 W x 4 for subwoofer (70 W x 1 ch/2 Ω) 25 W x 4 (BRI)
Continuous power output	27 W x 4 (DIN 45324, +B=14.4 V)
Load impedance	4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance	2.2 V/1 k Ω
Equalizer (3-Band Parametric Equalizer):	
(Low)	
Frequency	40/80/100/160 Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	± 12 dB
(Mid)	
Frequency	200/500/1 k/2 k Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	± 12 dB
(High)	
Frequency	3.15 k/8 k/10 k/12.5 k Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	± 12 dB
Loudness contour:	
(Low)	+3.5 dB (100 Hz) +3 dB (10 kHz)
(Mid)	+10 dB (100 Hz) +6.5 dB (10 kHz)
(High)	+11 dB (100 Hz) +11 dB (10 kHz) (Volume: -30 dB)

Tone controls:

(Bass)	
Frequency	40/63/100/160 Hz
Gain	± 12 dB
(Treble)	
Frequency	2.5 k/4 k/6.3 k/10 k Hz
Gain	± 12 dB
Subwoofer:	
Frequency	50/80/125 Hz
Slope	-12 dB/oct
Gain	± 12 dB

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format:	
Sampling frequency	44.1 kHz
Number of quantization bits	16; linear
Frequency characteristics	5 – 20,000 Hz (± 1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IEC-A network)
Dynamic range	92 dB (1 kHz)
Number of channels ..	2 (stereo)

FM tuner

Frequency range	87.5 – 108.0 MHz
Usable sensitivity	9 dBf (0.8 μ V/75 Ω , mono, S/N: 30 dB)
50 dB quieting sensitivity	15 dBf (1.5 μ V/75 Ω , mono)
Signal-to-noise ratio ..	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..	30 – 15,000 Hz (± 3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range	531 – 1,602 kHz (9 kHz)
Usable sensitivity	18 μ V (S/N: 20 dB)
Selectivity	50 dB (± 9 kHz)

LW tuner

Frequency range	153 – 281 kHz
Usable sensitivity	30 μ V (S/N: 20 dB)
Selectivity	50 dB (± 9 kHz)

Note

- Specifications and the design are subject to possible modifications without notice due to improvements.



Service Manual

ORDER NO.
CRT2830

MULTI-CD/DAB CONTROL HIGH POWER CD PLAYER WITH RDS TUNER

DEH-P6400R

X1B/EW

COMPACT
disc
DIGITAL AUDIO

- This service manual should be used together with the manual(s) listed below.

For the parts numbers, adjustments, etc. which are not shown in this manual, refer to the following manual(s).

Model No.	Order No.	Mech. Module	Remarks
DEH-P6400R/XN/EW	CRT2806		5992
CX-977	CRT2624	S9	CD Mechanism Module:Circuit Description, Mech.Description, Disassembly

EXPLODED VIEWS AND PARTS LIST**PACKING (Page 4)****● PACKING SECTION PARTS LIST**

Mark	No.	Description	Part No.	
			DEH-P6400R/XN/EW	DEH-P6400R/X1B/EW
	1	Cord Assy	CDE6435	UDE6435
	2	Accessory Assy	CEA3062	UEA3062
*	8	Polyethylene Bag	E36-615	CEG-127
	9	Polyethylene Bag	CEG-162	UEG-012
	10	Carton	CHG4628	UHG4628
	11	Contain Box	CHL4628	UHL4628
	12	Protector	CHP2251	UHP2102
	13	Protector	CHP2252	UHP2101
	14	Inner Box	CHW1754	UHW1754
	15-1	Owner's Manual	CRD3513	URD-195
	15-2	Owner's Manual	CRD3514	URD-196
	15-3	Owner's Manual	CRD3515	URD-197
	15-4	Installation Manual	CRD3529	URD-198
*	15-5	Caution Card	CRP1207	URP1207
*	15-6	Passport	CRY1013	Not used
*	15-7	Warranty Card	CRY1157	URY1087
	15-8	Polyethylene Bag	CEG1116	UEG1116
	16	Case Assy	CXB3520	UXB-009

EXTERIOR (Page 6)**● EXTERIOR SECTION PARTS LIST**

Mark	No.	Description	Part No.	
			DEH-P6400R/XN/EW	DEH-P6400R/X1B/EW
	5	Cord Assy	CDE6435	UDE6435
	11	Case	CNB2686	UNB2686
	13	Holder	CNC8659	UNC8659
	18	Tuner Amp Unit	CWM7984	UWM7984
	36	FM/AM Tuner Unit	CWE1562	UWE1562
	60	Detach Grille Assy	CXB7914	UXB7914
	80	Keyboard Unit	CWM7990	UWM7990

ELECTRICAL PARTS LIST(Page 32)**Tuner Amp Unit**

Symbol and Description	Part No.	
	DEH-P6400R/XN/EW	DEH-P6400R/X1B/EW
Q101, 951 Transistor	2SA1037K	2SA1162